

# Once Removed

*KER manufactures innovative products for today's horses*



Millions of horses in the world spend the majority of their lives in comfortable stables, decidedly removed from the world their free-ranging cousins experience. Confinement is a necessary evil in this day of population booms and shrinking green space, but such restriction often comes with a price, namely a set of novel health problems. These problems spring up because horses often consume diets that have little resemblance to what nature typically offers. To keep these problems at bay, Kentucky Equine Research (KER) has produced a line of innovative products designed to support optimal health.

Because land restrictions, competition schedules, and other factors reduce grazing time, horses are sometimes fed meals that are rich in concentrated feedstuffs. Without time to graze, this is the only way horsemen can properly fuel exercise and support body condition. Traditional concentrates, like the majority of those in today's marketplace, contain large amounts of starch, a key nutrient used by horses to produce energy to live and work. Starch is best digested in the small intestine. However, when a large amount of starch is fed in one feeding, not all of it can be digested in



the small intestine. Some of the starch passes into the horse's hindgut, where it undergoes bacterial fermentation. This process creates undesirable by-products, namely volatile fatty acids and lactic acid, which cause the pH of the hindgut to drop. If the hindgut becomes too acidic, problems often follow: decreased feed intake or complete inappetence in severe cases; mild to moderate colic signs of unexplained origin; poor feed efficiency and subsequent weight loss; and onset of stable vices such as wood chewing, stall walking, and weaving.

Horse owners often find themselves in a conundrum, as many times horses must be fed the starch-laden meals in order to fuel their work and maintain appropriate body condition. To combat hindgut acidosis, KER formulated **EquiShure**, a time-released hindgut buffer made of encapsulated sodium bicarbonate designed to keep the pH of the hindgut consistent.

When fed EquiShure, horses sidestep the ill effects often associated with hindgut acidosis. In one study conducted at KER, EquiShure was effective in attenuating hindgut acidosis that resulted from high grain intakes.

One way to avoid hindgut acidosis is through the provision of **Re-Leve**, a feed that has the distinction of being the first low-starch feed introduced into the marketplace. The energy in Re-Leve is provided primarily through fermentable fiber and fat, not starch. This scientifically formulated feed is offered in two formulations, Re-Leve Original and Re-Leve Concentrate. The original formula contains more calories than the concentrated formula, making it ideal for horses with higher energy needs.

Another side effect of offering horses diets composed entirely of hay and concentrates is a skewed balance of omega-3 and omega-6 fatty acids. Horses fed such diets often consume an overabundance of omega-6 fatty acids and insufficient omega-3 fatty acids. Scientists believe that ample omega-3 fatty acids in the diet have positive benefits on bone development, reproduction, and inflammatory conditions.

KER developed **EO-3** to ensure that horses receive appropriate amounts of omega-3 fatty acids. EO-3 is a potent, marine-derived oil that is rich in omega-3 fatty acids. In fact, this product contains an omega-3 concentration of 35%, more than most common fat supplements.

Nutritionists and horsemen can tweak diets until a horse's nutrient needs are met precisely. But, in order for the diet to be of maximal benefit, nutrients must be digested efficiently in the gastrointestinal tract. Due to age, illness, stress, or other factors, certain horses are unable to derive maximal nutrient benefit from their meals. For these horses, KER developed **Triad**, a scientifically formulated blend of yeast and yeast cultures designed to support digestion of vital nutrients. In research trials, Triad was found to increase digestibility of protein, carbohydrates, and minerals such as calcium, phosphorus, copper, and magnesium.

Few would dispute that horses are meant to graze. A physiological side effect of grazing is the constant loading and unloading of limbs, the combined action of which strengthens the skeletal system. When horses are confined to a stall during growth or layup, the bone mineral content drops, indicating a decrease in tissue strength. Researchers at Michigan State University found that housing yearlings

and two-year-olds in stalls without access to forced or free exercise impaired normal bone growth compared with horses maintained on pasture. Similarly, equine nutritionists at Virginia Tech reported that 12 weeks of stall rest decreased the bone mineral content of highly conditioned mature Arabian horses.

In this day and age, however, confinement is sometimes completely unavoidable. Because of this, KER created **DuraPlex**, a bone mineralization supplement that supports skeletal growth in all horses, regardless of age or discipline. DuraPlex is a proprietary blend of specific proteins, minerals, and vitamins scientifically proven to increase bone mineral density and bone area in both performance horses and growing horses.

In a trial conducted at KER, two-year-old Thoroughbreds were supplemented with DuraPlex during an exercise study. Horses receiving no supplementation exhibited demineralization of bone, which is typical of young horses in training situations when access to





free-choice exercise is restricted. DuraPlex supplementation prevented this bone loss.


Left to their own devices, few horses would experience joint problems because they do not typically place unnecessary stress or strain on their limbs. Since many horses are athletes, proper care of their joints and hooves is essential and key to long-term soundness. To guard against joint deterioration, KER developed **KER-Flex**, an oral joint supplement appropriate for horses of all ages and uses. KER-Flex contains a blend of glucosamine, chondroitin sulfate, MSM, and hyaluronic acid to provide broad-spectrum support of joint health.

Scientific research has proven that hooves respond to a combination of specific vitamins, minerals, and amino acids. With this knowledge in mind, KER created **Bio-Bloom**, a combination of biotin, methionine, zinc methionine, and iodine. These ingredients are included at levels shown to be beneficial for hoof growth and strength.

Advances in veterinary medicine have uncovered several metabolic disorders that affect horses. In general, these disorders have an effect on the production of energy within

individual cells. Signs of metabolic problems, however, vary from horse to horse. Because of this, the nutritional management of these horses often veers from traditional practices.

Many overweight horses are prone to metabolic conditions. Horses on low-grain diets often do not consume sufficient amounts of feed to fulfill their vitamin and mineral needs. For these horses, KER formulated **I.R. Pellet**, a concentrated source of essential vitamins and minerals. I.R. Pellet is a low-calorie supplement that contains very little starch. To support optimal digestion, yeast culture is included in I.R. Pellet.

Management of horses has changed considerably over the last few decades. Many horses are no longer given access to pastures and must derive all of the nutrients they require to grow and work from processed feedstuffs like hay and concentrates. Unfortunately, these diets have led to the development of unusual health issues. KER is leading the way in the development of supplements that address these issues and support top-notch health. For more information on these products, please visit [www.kerx.com](http://www.kerx.com) or call 859-873-1988. 



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