

PREMIUM E-SELENIUM

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The following is taken from a column by Jim Zamzow, Founder & President of DYNAMITE® MARKETING, Inc. and published in a DYNAMITE® Newsletter.

First off, let's take a look at selenium. So **toxic** that it is carefully regulated in feeds for meat and dairy animals, it is required only in **minute amounts**. It is a heavy metal that is right next to arsenic on the periodic table! (*Because of its weight, selenium tends to settle out of solution; be cautious of liquid supplements which contain selenium*). It is measured in parts per million (ppm) or micrograms. Selenium is an important antioxidant and free radical scavenger, and is essential for the formation of *glutathione peroxidase* and *superoxide dismutase* (SOD), both enzymes which are essential to a healthy immune system. Selenium is also essential for maintenance of muscle elasticity, including the muscles of the heart and blood vessels, and for proper thyroid hormone production. Low selenium levels are often found in cancer and heart patients. Symptoms of selenium deficiency can include tying up, white muscle disease in foals and other young animals, low disease resistance, lowered fertility and retarded growth, as well as poor hoof and hair growth.

Tying up is the reason most vets reach for the **E-Se** bottle or recommend high selenium supplementation. Before you do that, consider the possibilities of magnesium deficiency (many mares become magnesium deficient due to high estrogen levels when they are in heat), inadequate fat in the diet resulting in low blood glucose levels, electrolyte imbalance, and even emotional factors and pain. There are many reasons why horses tie up, and selenium does not address a number of them.

Interestingly, symptoms of selenium toxicity can mimic the deficiency. Well-meaning owners and trainers of the "more is better" persuasion often give **E-Se** shots or supplemental selenium via grain mix or supplement in excess of the 1-2 mg. per day level that I feel is safe. (*The FDA does not regulate selenium levels in horse feeds, and generally does not object to levels up to 1 mg. per day of supplemental selenium. The maximum total recommended by the FDA is 2 mg/head/day*). Selenium toxicity symptoms can include falling-apart hooves and loss of mane and tail hair, as well as lameness.

Mary Beth de Ribeaux, writing in *Equus* says:
"...the explorer Marco Polo may have been referring to selenium poisoning in 1295, when he noted that if horses ate certain plants in western China, their hooves sloughed off. Similarly, the Battle of the Little Bighorn may have been determined by the plant: with many of their horses and mules lame, some dying and others acting 'locoed', Maj. Marcus Reno's reinforcements could cover only 10 miles instead of the expected 30 miles daily and failed to reach Gen. Custer's troops in time ... Reno's horses had over-wintered in a part of South Dakota noted for high selenium levels (where) ... grasses and grains can build up selenium concentrations of 10 to 30 ppm ... Two ppm of dietary selenium (in the total ration) is considered the upper level of safe consumption."

So how much selenium is enough - or too much? First, observe the obvious. If your horse is performing to expectations, he probably has adequate levels of nutrients including selenium. "If it ain't broke, don't fix it!" As an aside, be-

cause so many blood tests are done at the race track where selenium supplementation runs rampant, the "normal" level has become skewed to the high side, and many vets will tell you that a horse is low in selenium when he is in fact just fine. A lot depends on your area of the country, and where your feeds are coming from. Generally, the part of the country west of the Rockies and the eastern third of the country (*with the exception of Mississippi and Alabama, which tend to be high*) are selenium deficient or marginal. The middle part of the country is generally in pretty good shape, and areas of the northern plains can tend toward toxic levels. For this reason, we offer products with varying levels of nutrients including selenium:

- ✓ **DYNAMITE® Original** -selenium 18 mg./ lb. or 1.97 mg. per 1¾ ounces training level.
- ✓ **DYNAMITE® Plus™** - selenium 0.56 mg./lb. or 0.11 mg. per 3 ounces training level
- ✓ **DYNAMITE® Vitamin Mineral Mix™**- 10 ppm selenium (*to convert ppm to mg./#, multiply by 0.4536*)
- ✓ **DYNAMITE® Premium E-Selenium™** - 125 mcg of a pure, amino acid chelated selenium per scoop (1/20 ounce). *This is a potent product: feed only 2 of the enclosed scoops daily (1/10 ounce) for maintenance if feeding Plus in a selenium deficient program, or 4 - 6 scoops daily for severe deficiency under veterinary supervision by blood assay.*

Horses competing at intense levels of activity such as racing, endurance, eventing, etc. generate higher levels of free radicals and often benefit from higher selenium levels. Also, many people who feed **MSM** regularly or have high sulfur levels in their water and feed or soil need to know that sulfur suppresses selenium, and they may wish to supplement with higher levels. Many of our most successful Distributors and customers alternate feeding **DYNAMITE® Original** and **Plus™**, or offer **Vitamin Mineral Mix™** as free choice to ensure optimum selenium levels. Or, they add a little **Premium E-Selenium™** if they are feeding **Plus™**. As an aside, **Plus™** for people and our **Showdown®** products for dogs contain selenium as well.

As leading soil scientist C.J. Fenzau says, "*When you take hold of just one nutrient and try to separate it from the others, you will find you have the whole world by the tail.*" The tendency for researchers is to study one element at a time, taken out of context of a balanced ration, and then declare that element either a panacea or a culprit. Usually the truth exists in some middle ground. My feeling is that supplementation with low optimum levels of a balanced profile of major and micro-trace minerals, along with vitamins and digestive aids, will usually allow the animal to balance its own system without danger of toxic overload. The incredible performances consistently turned in by our **DYNAMITE®** athletes are testimony enough. Look at the total picture before you consider potentially dangerous levels of selenium, a micro trace which can be friend or foe! *Jim*

NOTE: Try Premium E Selenium for 3 wks then test. If you feed more than 1 oz of **DYNAMITE® Regular**, you are already receiving optimum levels of selenium. ■