

# **Selenium: the organic – inorganic debate explained**

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By now, most horse owners living in the Pacific Northwest, know they live in a area of extreme selenium deficiency. Supplementing selenium is very important. What they may not know is there are forms of selenium which are radically different from each other.

Selenium is divided into two groups, organic and inorganic.

Organic Selenium is the form of selenium in plants. It is the only form animals naturally encounter. It has been taken up from the soil and incorporated into an amino acid. This is the form which is digested and used efficiently.

Inorganic Selenium, seen on labels as both Sodium Selenite and Selenate, is actually a bi-product of copper-mining and is highly toxic. For years, this was the only type of selenium available.

Nutritional scientist have found that organic selenium is not only the natural form but a much healthier than selenite. In 2004, the FDA approved an Organic Selenium for use in equine rations.

To make Organic Selenium, yeast plants are fertilized with inorganic selenium. The yeast incorporates inorganic selenium into amino acids to form organic selenium. Even though this is a costly process, the resulting selenium has been proven to be more easily digested, metabolized and retained by all animals. In short, organic selenium is significantly more effective than Sodium Selenite/Selenate.

Research shows that inorganic selenium is less available than organic selenium in times of stress including the stress induced by exercise/performance, disease, injury, pregnancy/delivery and birth. The reason is that the molecular structures of organic selenium and inorganic are radically different from each other. The inorganic molecule doesn't fit into the body's storage mechanisms so the body isn't naturally able to retain it.

Inorganic selenium has also been proven to be much less stable in the blood system than its' organic counter-part. For instance, in a study involving Thoroughbreds, it was proven that horses given selenite lost a greater amount of selenium in their urine during times of stress than the horses given organic selenium. This excretion means less selenium in the blood stream to be used for rebuilding and regeneration of cells.

Research clearly shows that organic selenium is much less toxic than inorganic. Organic selenium is absorbed from the gut via amino acid pathways which limits excessive uptake.

In contrast, selenite is passively absorbed which allows rapid and unregulated uptake of potentially toxic levels.

The affects of supplementing organic selenium to pregnant mares is tremendous. The mare is better able to handle the stress of birthing, has less damage from the muscular stresses and expels the placenta more quickly. This means a stronger mother with less chance of infection. She also provides colostrums with higher antibody and selenium levels. This allows the foal to build quicker immunity and experience less damage from the stress of birth, creating a strong foundation for the rest of his life.

The benefits of organic selenium for both the pleasure and performance horse include faster recovery from stressful events, less damage from performance, higher immunity and quicker recovery from disease.

Certainly, in areas of extreme selenium deficiency, supplementing with any selenium is better than no selenium. Unless organic selenium is given, the animal won't be receiving maximum benefit.

Organic Selenium is included in all of Equine Nutrition's vitamin mineral supplements including Horse Guard, Mega Dose, Trifecta and Super Gain.