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Selenium Should Be Included in Mineral Mixtures Fed to Cattle in Florida

by F.M. Pate, Nutritionist
University of Florida, IFAS, Ona REC

For questions or comments regarding this publication contact



[Findlay Pate](#)

Selenium is used by animals as a part of enzymes which act as antioxidants to prevent damage of various membranes. It is associated with vitamin E in this regard.

The best known symptom of selenium deficiency is white muscle disease in calves. Although white muscle disease is not exceedingly common, this disease has been observed in a number of instances throughout Florida.

The requirement of selenium by cattle is very small. The National Research Council suggest that cattle diets contain between 0.1 and 0.3 parts per million (ppm) of selenium. Several surveys on the selenium content of Florida pasture grasses have shown that selenium levels are usually below 0.1 ppm. In fact, considering that the selenium levels most often found in Florida grasses are between 0.03 to 0.08 ppm, it is remarkable that selenium deficiencies have not occurred more frequently in Florida cattle.

There is a narrow range between a selenium deficiency and toxicity in cattle. Selenium toxicity can occur if the diet contains greater than 2 ppm of selenium. Because of the potential toxicity, the Food and Drug Administration (FDA) prohibited the addition of selenium in animal feeds for many years. In the early 1980's the FDA allowed the addition of selenium in animal diets at the 0.1 ppm level. The level at which selenium could be added to diets was increased to 0.3 ppm in 1987, but was recently reduced back to 0.1 ppm.

Like many other trace minerals, not supplementing grazing cattle with selenium would in many cases not cause a deficiency problem. However, it is difficult to predict when or where a selenium deficiency will occur. Also, a borderline deficiency may cause slightly reduced pregnancy rates or slightly lower calf weaning weights which could reduce profits, and yet may not be detectable. Considering these situations selenium is recommended in a mineral supplement simply as an insurance measure.

The good news is that the level at which selenium is used in a mineral supplement is very small and inexpensive. When selenium is added to mineral mixtures to provide the recommended intake of 1 mg per cow per day, it costs approximately \$1 .00 per ton of mineral mix. Thus, it cost only two cents to provide supplemental selenium to a brood cow for one year. A very low cost insurance policy.