

## **Selenium Benefits in Livestock**

Selenium is an essential nutrient for most livestock. It is required for cattle for normal growth and fertility and for helping to prevent other health diseases such as mastitis and calf scours. Since selenium can be toxic at upper ingestion levels, the government has placed a maximum amount which can be added to a ration at 0.3ppm. In areas where the soil is deficient in selenium and therefore the feedstuffs are deficient, this maximum level creates challenges in properly feeding livestock.

Selenium is a component of the enzyme glutathione peroxidase which is an enzyme which inhibits and destroys naturally occurring peroxidases which cause cell damage. Selenium works with Vitamin E to protect cell membranes including cell walls. Selenium is stored for a short time in the liver. Selenium deficiency will release free radicals which damage muscle tissue of the heart and liver. This causes a disorder called nutritional muscular dystrophy or white muscle disease. Other problems which result from selenium deficiency are:

1. Sub optimal milk production
2. Mastitis
3. Sub optimal fertility in adult cattle
4. Retained placentas
5. Premature calves, weak calves
6. Abortions

In young animals, selenium deficiency causes:

- Death in calves 2-3 days post birth
- Weak calves, which are unable to stand
- Poor growth rate

Selenium deficiency in soils tends to be in acidic soils with high annual rainfall.

Pastures which have been fertilized with high phosphate or high sulfur fertilizers

Regional areas can be deficient or have excess selenium in the soils.