

When a little is all that you need.....

It is important that your sheep get adequate levels of selenium supplemented in their diet to maintain normal body functions; too little or too much can cause disease or death. Selenium is referred to as a micro mineral because it is only required in very small quantities, mgs (1/1000th of a gram) per day is all that is needed.



Selenium supplementation is important in the prevention of white muscle disease in lambs. White muscle disease causes degeneration of both skeletal and cardiac muscles. Selenium is a critical part of glutathione peroxidase, a cellular antioxidant that protects cell function. Vitamin E works with selenium to collectively protect cell function. Vitamin E protects cell membranes and selenium the cell contents from oxidative damage.

Another important role of selenium is that a selenoprotein (a protein that requires selenium) is needed in the conversion of thyroid hormone to the active form. Thyroid hormones are important regulators of cellular activity and overall body metabolic rate and cellular metabolism.

What does selenium deficiency looks like?



White muscle disease is the best known form of clinical selenium deficiency. Any aged animal may be affected but younger animals most commonly experience clinical disease. Affected animals will show clinical signs consistent with the muscles that are experiencing degeneration. Typically both hind legs are symmetrically affected; however tongue and heart muscles may also be affected in newborn and young growing animals. When skeletal muscle is affected animals will show varying degrees of lameness,

weakness or have difficulty moving. Sudden deaths may be seen when the heart muscle is affected. In newborn animals if the tongue is affected they may be unable to nurse and be considered to be "dummy lambs". Severe selenium deficiency has been associated with abortion and stillbirth.

Selenium also plays an important role in how effective the animal's immune system functions and marginal deficiencies will result in an increased susceptibility to disease. Studies have shown that selenium is involved in a nonspecific immune response where the cells that engulf the bacteria (phagocytes) are unable to kill the ingested bacteria when animals are selenium deficient. Subclinical selenium deficiency also makes it difficult for the animal's immune system to produce antibodies to an infectious agent. This will result in the clinical signs persisting longer than expected and give the producer the perception that the treatment failed. Selenium's role in thyroid function may explain the occurrence of premature, weak, or failure to thrive lambs when the ewes are selenium deficient.

Supplementation of selenium and vitamin E is not complicated but it is necessary for the production of healthy sheep. Using programs like "SheepBytes" makes it easier to balance rations so that the nutritional requirements of your sheep can be met. Once the clinical signs of deficiency are seen there is no easy remedy, prevention is definitely the key.

