

White Muscle Disease or Stiff Lamb Disease

VITAMIN E and/or SELENIUM DEFICIENCY

White muscle disease is the result of degeneration of skeletal and cardiac muscles of lambs. It is most common in areas where lambs receive good quality feed and are fast growing. It is usually an acute disease that manifests itself in fast growing lambs at three to eight weeks of age. The disease is a manifestation of lack of Selenium, Vitamin E or both. There are Selenium deficient areas within the country, predominately in the states of Wisconsin, Illinois, Indiana, Michigan and Ohio in the north central region of the United States. Selenium is also deficient in the Northwest, Washington and Oregon.

While the leg muscles are generally affected first, any muscle area including cardiac muscle may be affected. Chronic or borderline deficiencies may result in lung edema resulting in increased pneumonia problems. It is quite common for the disease to show up after forced exercise, vaccination procedures, sorting, weaning, fitting or being chased by dogs or children.

Diagnosis is based on clinical symptoms of stiffness, swollen hindquarters or lambs may simply be down. Animals are generally bright and alert and will continue to eat and drink if possible. For those who are mobile, they may have arched backs and appear to have tucked in flanks.

Differential diagnosis from tetanus lambs is made on the basis that tetanus lambs become very rigid and the lambs with white muscle become flaccid. Lambs with intestinal displacement act similar but exhibit pain and generally die within hours, and usually fewer are affected. Laboratory confirmation is achieved by histological examination of affected muscle.

Treatment is accomplished by the use of both Vitamin E and Selenium because the condition may be caused by a deficiency of Selenium, Vitamin E or both. Since the two elements compliment each other both are used in treatment. Selenium is more important in Selenium deficient areas and Vitamin E in Selenium sufficient areas or diets.

The injectable Selenium, Vitamin E product that is available does not contain adequate levels of Vitamin E. Once adequate levels of Selenium have been reached, which can be accomplished with one injection, do not repeat because it is very easy to cause acute Selenium toxicity, which will result in sudden death. Additional Vitamin E (200-400 I.U.) should be given with initial Selenium injection. Vitamin E injection should be repeated as needed. Azium (Dexamethasone) helps give symptomatic relief and antibiotics should be used to prevent pneumonia.

Oral Vitamin E products are available that may be added to drinking water. This allows for increased assimilation of Vitamin E and does not cause forced exercise of lambs as injections will. A prevention program is dependent on a definitive diagnosis. Blood and tissue levels of Selenium and Vitamin E are necessary in order to determine the proper supplementation.

Selenium may be provided by injection, feed or salt. We believe that oral administration is safer and more cost effective. In Selenium deficient areas both feed and salt may be utilized. Vitamin E supplementation in fast growing lambs is always essential. It is of particular importance in northern areas with early born lambs. Lambs are particularly susceptible if ewes have been fed one year or older hay.

Colostrum levels of Vitamin E increase with ewe supplementation. Ewes may be fed Vitamin E prior to lambing, a therapeutic dose two to four weeks before lambing works well. Gestation rations may be constantly supplemented with vitamin E 40,000 units per ton on a complete ration

basis. Since Vitamin E is not transmitted from dam to fetus across the placenta, colostrum transmission is important.

At birth lambs should receive at least 200 iu Vitamin E. This should be repeated at three weeks if necessary. This may be injected or given orally. There are high-energy oral products containing Vitamin E that work very well particularly for the first treatment.

Vitamin E may be supplemented at the rate of 125,000 iu per ton in creep feed, 80,000 iu per ton in the growing rations and 40,000 iu per ton in the finishing rations. If these levels do not correct the situation professional advice from a veterinarian is advised.

In areas where sheep are on grass most of the year, Vitamin E levels may be adequate requiring only Selenium supplementation.

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