

Selenium is an essential trace element. Deficiencies can cause white muscle disease, infertility and ill thrift, which contribute to significant production losses.

Why is selenium necessary?

Selenium is necessary for normal growth of animals. Selenium is obtained through diet and acts primarily in the body as a “cleaning up” agent, or antioxidant, which neutralises toxic substances produced by the body’s cells during normal metabolism. Without these antioxidants, growth and production are impaired, and serious disease, and even death, may occur.

Selenium deficiency is widespread throughout Australia, occurring in large parts of Western Australia, and in parts of South Australia, Victoria, Queensland, New South Wales and Tasmania.

What factors affect selenium availability?

Selenium availability is determined by soil type and pasture species. The selenium content of pasture is lowest in spring when the growth is greatest. Deep-rooted plants such as lucerne will have higher selenium concentration during this period than shallow-rooted plants. Clovers are less efficient than some other pasture varieties in their ability to take up selenium from the soil. Higher rainfall zones are more commonly affected due to leaching than drier areas.

How is selenium deficiency diagnosed?

The signs of selenium deficiency are non-specific, as other trace elements and nutritional deficiencies can also cause poor growth rates and infertility. Soil and pasture testing is unreliable. Blood testing of at least 10 sheep can be done or liver samples from slaughtered animals can be taken. Otherwise a response to selenium supplementation may be trialled. Seek veterinary advice on the best approach for your property.

What is White Muscle Disease?

White Muscle Disease can occur in all farm animal species, but is most often seen in young, rapidly growing lambs, weaner sheep and calves. It occurs as a result of severe selenium deficiency. Lambs are generally affected from 1 month of age and the disease is often irreversible. Accumulation of toxic substances results in muscle damage. Usually the most active muscles (thigh muscles) are involved. The affected muscle becomes pale, and is visible on post mortem examination. White Muscle Disease can also affect the heart, causing sudden death. Congenital White Muscle Disease increases lamb mortality.

What other effects does selenium deficiency have on productivity?

Less severe selenium deficiency can cause productivity losses due to:

- Reduced fertility in ewes and rams
- Increased mortality in lambs
- Reduced wool production
- Ill thrift and poor growth rates

Can selenium toxicity occur?

Selenium is toxic if administered in excess.

Selenium supplementation should only be done under recommendation from your veterinarian. It is important to only use one form of supplementation (eg. selenium vaccine only) unless your vet recommends otherwise. Selenium toxicity in sheep leads to inactivity and death.

When is adequate supplementation most important?

Rams and Ewes: Prior to mating to ensure optimal fertility.

Ewes: Mid to late pregnancy to ensure adequate selenium for the growing foetus.

Lambs: Marking and weaning vaccinations help to ensure adequate levels of supplementation in growing lambs.

Seasonal influences should be taken into consideration.

Can selenium be supplemented in a vaccine?

Glanvac™ 6S, Glanvac™ 6S B12, Glanvac™ 3S and Glanvac™ 3S B12 all contain selenium supplementation.

When are the recommended vaccination programs?

Selenium supplementation within a vaccination program should only be used when a known deficiency exists.

	Marking	Weaning	Pre-joining	Pre-lambing
Lambs	✓	✓		
Ewes			✓ OR	✓
Rams			✓	

What is the correct dose rate?

Glanvac™ 3S, Glanvac™ 3S B12, Glanvac™ 6S, Glanvac™ 6S B12 1mL subcutaneously

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