

Top Dressing Pastures with Selenium

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Introduction

Selenium deficiency is a widespread problem throughout the Tablelands of NSW and Victoria, and can cause the condition known as "White Muscle Disease" in young stock. It is also associated with weaner ill-thrift; poor fertility in cattle, sheep and goats; lower disease immunity; depressed wool growth in sheep; and lower milk production in dairy cattle.

New Approach to Selenium treatment

In 1988, a new product, Crop King Selcote^(R), was released by Incitec which offers a cost effective, convenient alternative to selenium drenches and bullets and so cuts down on extra handling of livestock.

Selcote^(R) is a granular product which is usually applied to soil with annual fertilizer application. The selenium is released from the granules and is then taken up by the pasture.

Livestock grazing the pasture receive a continuous selenium intake while pasture levels are high. A store of selenium is built up in the animal which is drawn

upon as pasture levels decline, providing year-long protection.

Although Selcote^(R) gained favour with many graziers, it has three limitations:

- annual application is required;
- animals must receive four months grazing out of the first eight after application;
- pasture selenium peaks and declines rapidly, and livestock brought in later than six months after application will not obtain sufficient selenium to ensure protection.

To overcome these limitations, Selcote^(R) has been replaced by an improved formulation, Selcote Two Year^(R). This product combines both quick and deferred release component to sustain pasture selenium levels for a much longer period. Livestock grazing on Selcote Two Year^(R) treated areas will receive 24 months protection and new livestock can be introduced up to 18 months after application.

Selcote Two Year^(R) needs to be re-applied every second year. This provides more flexibility with supering programs.

The major benefit of Selcote Two Year^(R) is a continuous availability of selenium to livestock, either directly from pasture or from body reserves built up from ingested selenium when pasture levels are high. This provides security in knowing animals are protected against selenium deficiency, and eliminates the need for drenching or bullets.

Selcote Two Year^(R) is simply applied at a rate of 1 kg/ha with other fertilizer.

Selenium Blood Monitoring Trial

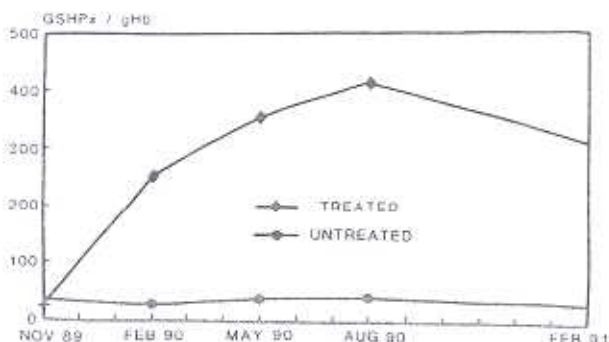


Figure 1: Blood selenium levels of wethers in demonstration trial at Yass.

A trial located on Sam Weir's property, "Idelmere", near Bowning, to monitor selenium in blood of

livestock grazed on Selcote Two Year^(R) treated and untreated pastures.

Two flocks of 18 month old Merino wethers (200 sheep each) were grazed on untreated pasture and pasture treated with Selcote^(R) at 1 kg/ha. Blood sample were taken from ten animals from each group prior to the study (3.1.89) to establish initial blood selenium levels. The mean value of 26 GSHPx/g Hb was below the threshold of 50 required to ensure that selenium is not limiting to animal production.

Selenium blood levels of the same animals was monitored at 3 month interval over an 18 month period. It is clear from results shown in Figure 1 that Selcote Two Year^(R) provided a quick and constant supply of selenium for minimal labour input.

While selenium levels remain high in the treated group after 18 months, it is expected that the level should taper off after two years. The demonstration is continuing to determine the rate of decline in blood selenium over the next 12 months.