

Sheep Notes



Welcome to the spring edition of SheepNotes 2023. It is with mixed feelings that we compile this, reflecting on the current sheep market and climate projections for the season. At the time of writing, the spring is looking variable across the state, with very useful October rains received in some parts but an early finish looking likely for others. For many, it has been a very good winter and early spring, leading to good stock condition and lambing results.

Thank you to those who have given us feedback on this newsletter. We are moving towards digital SheepNotes into the future, so please subscribe to the newsletter so we can keep in touch: <https://agriculture.vic.gov.au/support-and-resources/newsletters/sheep-notes-newsletter>. Past editions and articles can be found on our website.

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Worm resistance in Victoria

Dr Steve Cotton – Dynamic Ag Hamilton

- **Drench resistance of most of the single active drenches in Victoria is quite high on properties tested.**
- **Knowing and managing your property's resistance to chemical groups will give you better protection and control to worm infestations, particularly in challenging years (like last year).**

Part of a solid worm control program is to understand what level of resistant worms you have on your property and to what extent these worms have resistance to the various chemical groups on the market. While rotating drenches is important, we must be rotating actives rather than brand names because quite often, the different brand name products contain an active from the same chemical group (for example Abamectin versus Moxidectin) or worse still, the same active (e.g., Triguard versus Trifecta).

The level of drench resistance from year to year can change markedly on the same farm. You can see in Table 1 how the efficacy of the same active

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Do I need to give selenium or vitamin B12/cobalt to my sheep?

By Lisa Warn (Lisa Warn Ag Consulting)

Whether to supplement sheep with the trace elements selenium or vitamin B12/cobalt is a frequently asked question by producers. Many are using vaccines and drenches that contain these additives without knowing if they are necessary for their sheep or if these short-acting products would be adequate if they did have a deficiency.

Managing the risk of a trace element deficiency in stock is not always straightforward. Even if a region has some soil types that are naturally low in selenium or cobalt, the occurrence of deficiencies in stock can be very sporadic, seasonal, and can be influenced by different pasture species/crops on the farm, fertiliser history or class of stock.

Role of selenium and vitamin B12/cobalt

Selenium is an essential element for animals, but not plants. Selenium is required by sheep for growth and has a role in immune function.

Cobalt is required by rumen microbes to synthesise vitamin B12. Without an adequate supply of cobalt from the soil or feed a vitamin B12 deficiency can occur. Vitamin B12 is important for energy metabolism, protein synthesis and production of red blood cells.

Symptoms of Selenium and Vitamin B12 deficiency are summarised in the boxes.

Marginal selenium and cobalt areas in Victoria

Areas in Victoria at risk of trace element deficiencies in stock or pastures were documented and mapped by the Department of Agriculture in the book "Trace elements in Victoria" by Hosking *et al.* (1986). Based on available experimental data at the time, the maps show areas where records of livestock blood tests indicated low levels for a trace element or where responses to trace elements had been obtained (Figures 2 and 3).

Risk factors

In the marginal selenium and cobalt areas, rapidly growing lambs and weaner sheep are most at risk. The conditions that can predispose sheep to selenium or Vitamin B12 deficiency are summarised in the boxes.

Diagnosis

Early diagnosis of a disease and treatment are essential to minimise production and stock losses. A veterinarian can help diagnose a selenium or vitamin B12 deficiency by collecting blood samples or post-mortem liver samples for laboratory analysis.

Blood samples can also be taken from weaned lambs (or adult sheep), who are not showing clinical signs of disease, to determine their trace element nutritional

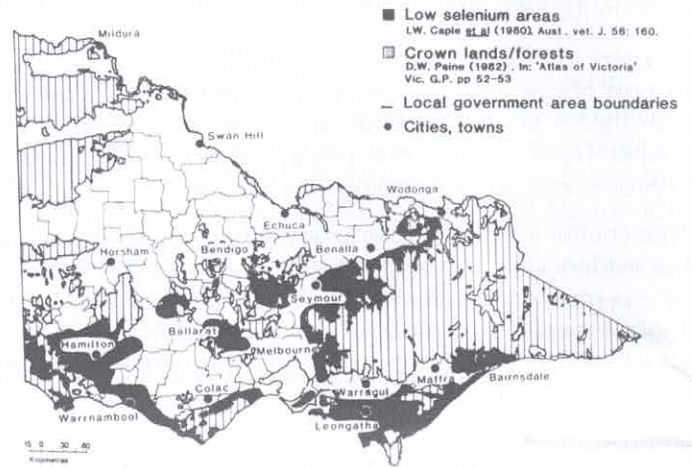


Figure 2. Map of Victorian showing marginal selenium areas based on original data by Caple *et al.* (1980). Within the black shaded areas sheep may have blood glutathione peroxidase activities less than 50 units, cattle less than 40 units (from Hosking *et al.* 1986).

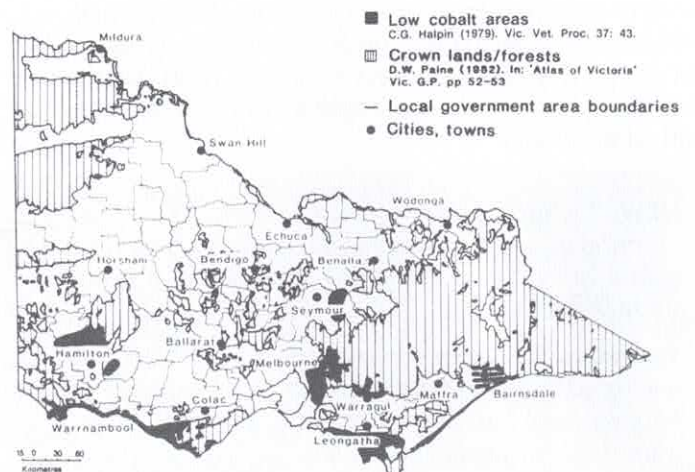


Figure 3. Areas where cobalt deficiency has been detected in livestock in Victoria based on original data by Halpin (1979). (from Hosking *et al.* 1986).

status and see if they might be at risk. **Plant leaf analysis or soil tests are not appropriate methods to determine the nutritional status of stock.**

Recently, the Bairnsdale Bestwool/Bestlamb group undertook a survey of group members flocks to ascertain the selenium and vitamin B12 status. The area is known to be marginal for both (Figures 2 and 3). On each farm, blood samples were taken from lambs (born in late winter/spring 2020) at marking and weaning, before any trace elements were given in vaccines. This work was part of a Meat and Livestock Australia (MLA) Producer Demonstration Site (PDS) project. The results highlighted that 5 out of 10 group members flocks had blood selenium levels considered to be marginal (20–50 GSHPx units) and 1 flock was deficient (less than 20 units). Only one of the 10 flocks had blood vitamin B12 levels that were marginal (200–400 pmol/l). Spring pasture conditions were above average during 2020 to 2021 when the PDS was run.

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Selenium deficiency

Symptoms

- Ill-thrift – reduced weight gain and wool growth in lambs.
- White muscle disease – can affect lambs and calves:
 - Stiff-legged gait or unable to stand.
 - Arched back.
 - Sudden death – caused by lesions in heart muscle.

Risk factors

- Stock class – Young growing stock are most susceptible
- Soil type – sandy or granite soils
- Seasonal variation – lowest levels of selenium in pastures occur in spring and summer.
- Variation between years – white muscle disease in lambs and calves in spring is most prevalent in years when there is good autumn rainfall and abundant clover growth in spring
- Heavy or long-term applications of fertilisers containing sulphur (eg. superphosphate or gypsum) decrease the concentration of selenium in pastures and may also decrease the uptake of selenium by livestock.
- Pasture type – Clover dominant pastures – clovers have lower Se concentrations than grasses.

If blood tests indicate weaner sheep have marginal / deficient levels of a trace element a response trial can be conducted. A definitive diagnosis of a trace element deficiency can only be made from measured improvements in health and production of animals following supplementation compared with a 'Control' group with no supplementation.

However, carefully controlled response trials cannot always be conducted on farms and predictions of likely benefits from supplementation may have to be based on information relating production responses to the results of blood tests.

Preventative treatment options

Selenium (Se) is available by injection either alone or in combination with vaccines or drenches, as is vitamin B12 (but as cobalt (Co) in drenches). Se and Co are also available in rumen pellets which can be given to lambs at weaning and can last for 3 years.

In low Se areas, lambs can be treated with a Se injection at marking and weaning. Short-acting forms of Se found in vaccines can give 6–8 weeks protection. The need for any follow up treatment, or the need for a longer-acting Se injection (18 months protection) at marking or a selenium rumen pellet at weaning, will depend on the extent of the deficiency/risk period and the age that the lambs are kept.

Vitamin B12/Cobalt deficiency

Symptoms

- Reduced appetite and growth rates
- Diarrhoea
- Weeping 'rheumy' eyes
- Anaemia
- Scaly ears (Affected sheep show signs of photosensitization associated with liver damage).

Risk factors

- Stock class – Young growing stock are most susceptible. Lambs are more susceptible than calves.
- Soil type – coastal calcareous sands, sandy or well drained soils.
- Seasonal variation – cobalt in pastures and plasma vitamin B12 in livestock is lowest in spring.
- Variation between years – seasons favouring lush pasture growth favour development of cobalt deficiency. This is due to animals ingesting less soil when grazing lightly stocked, rapidly growing pastures. Soil provides a more concentrated source of cobalt to the ruminant than pastures.
- Pasture type – Grassy pastures – grasses have lower Co concentrations than clovers.



In Victoria, no responses to selenium treatment have been observed in adult sheep. However, if pregnant ewes are deficient, they can be treated with a short-acting selenium injection 4 weeks before lambing so that lambs are protected from white muscle disease in the first few weeks after birth.

In low cobalt areas, lambs can be treated with a vitamin B12 injection at marking and weaning. Short-acting forms of vitamin B12 in vaccines or separate injections can give up to 6–12 weeks protection, depending on the extent of the deficiency. There are no long-acting B12 injections available in Australia. The need for any follow up treatment or the need for a cobalt rumen pellet at

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Weaning will depend on the extent of the deficiency/risk period. If ewes are deficient, they can be treated with a vitamin B12 injection before lambing to ensure adequate vitamin B12 reserves in the foetal liver and colostrum.

The addition of Se to a 6 in 1 vaccine increases the cost by around 5 c/dose while the addition of vitamin B12 increases the cost by around 40 c/dose (nearly double the cost of the vaccine). A separate vitamin B12 injection costs around 8c/dose (lamb dose) so is a cheaper option if it is needed but requires the extra labour/time for a separate injection. A long-acting Se injection can cost 30c/dose (lamb) to 60c/dose (adult). In severely deficient areas where use of rumen pellets may be an option at weaning, the cost is around 90c for a selenium pellet (with a grinder), \$1 for a cobalt pellet (and grinder) or \$1.50 for a Se and Co pellet.

Seek advice

If you are uncertain about whether your stock may be at risk of certain trace element deficiencies it is important to seek expert advice from your veterinarian or animal health advisor. They can diagnose if selenium or vitamin B12, or both, is an issue or not and if so then work out which product/s will supply the required trace elements to cover your main risk period, most efficiently and at lowest cost.

For more information about the MLA PDS 'Managing trace elements in sheep' go to the MLA website: mla.com.au/extension-training-and-tools/search-pds/pds-data/managing-trace-element-deficiencies-in-sheep/

Thank you to Dr Dianne Phillips and team at Agriculture Victoria, for collecting the blood samples for the MLA PDS project.

The importance of understanding 'fit to load'

Angus Misan, Veterinary Officer, Bendigo

The daily transport and movement of livestock is an integral part of our sheep industry. While the transporter is responsible for the animals during the journey, the consignor is responsible for the assembling and preparation of livestock, including the assessment of whether animals are fit to load.

In summary, an animal is **not** fit to load if it:

- is not able to walk normally or bear weight on all 4 legs. This may be due to a recent or old fracture, an injury, a deformity, or an infection.
- is not strong enough to make the journey
- is suffering from severe distress or injury
- is in a condition that could cause it increased pain or distress during transport
- is blind in both eyes
- is in late pregnancy.

If you identify an animal that is unfit to load you have a few options. You could treat the animal and transport it when it has recovered and is fit to load. Naturally this is not an option in cases that are not readily treatable. Alternatively, you could humanely destroy the animal. Finally, you could consult a veterinarian and only transport under veterinary advice. Generally, if in doubt, leave it out.

Not only does loading an unfit animal compromise welfare, but it also has the potential to reduce interest from buyers assessing the mob as sub-standard based on a few individual sheep, and it reflects poorly on the sheep industry as a whole.

Abattoirs and saleyards also have a duty of care to the livestock they receive, and if they note any issues, the livestock that were unfit to load may be humanely

destroyed and followed up, which could include reporting to Agriculture Victoria for investigation. Remember you, the person in charge of the animal and its assessment prior to loading, are responsible for its welfare. Producers have a vital role in maintaining welfare standards and the public image of the sheep industry, and community values and expectations will not accept anything less.


A guideline titled 'Is the animal fit to load?' has been produced by Meat and Livestock Australia (MLA). This guideline can be viewed electronically on MLA's website or ordered freely from MLA. The MLA fit to load guide is a national guide to help producers, agents, buyers, and transporters decide if an animal is fit to be loaded for transport by road or rail to any destination within Australia.

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MEAT & LIVESTOCK AUSTRALIA


Is the animal fit to load?







A national guide to the pre-transport selection and management of livestock








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The national guide includes more detailed information to help producers, agents, buyers and transporters decide if an animal is fit to be loaded for transport by road or rail.