



July Sheep Health

AHWNF Flock Health Focus: Could Cobalt Deficiency Be Holding Back Your Lambs This Summer?

As the grazing season progresses, many farmers begin to assess whether this year's lamb crop is meeting expected growth rates. While parasite burdens and nutrition are often the first factors considered, trace element deficiencies can also play an important role. One of the most common is cobalt deficiency, which can significantly reduce lamb performance if left unrecognised.

Why is cobalt important?

Unlike many minerals, cobalt is not used directly by the lamb itself. Instead, it is required by the microbes in the rumen to produce vitamin B12. Vitamin B12 is then used by the liver to convert nutrients into energy, making it essential for efficient growth and productivity.

Cobalt deficiency, also known as 'pine', can become an issue in lambs particularly post weaning. While suckling, ewe's milk provides a source of vitamin B12, but once lambs become dependent on forage their vitamin B12 supply relies on an adequate intake of cobalt. Fast-growing, intensively managed lambs often have a higher requirement and can therefore be more susceptible to deficiency.

Where does cobalt deficiency occur?

Cobalt deficiency is usually associated with soils naturally low in cobalt. Even where cobalt is present, alkaline soils or those with high levels of iron or manganese can lock it up and reduce its availability to grazing animals.

Modern, intensively managed pastures may also contain lower concentrations of cobalt than less intensive systems. Cereals, particularly whole grains, are naturally low in cobalt, so diets relying heavily on these feeds may not provide sufficient amounts- hence cobalt deficiency is more common in intensively managed lambs.

Recognising the signs

The effects of cobalt deficiency are often gradual and can be easily mistaken for other health or nutritional problems. Farmers should consider investigating cobalt status if a group of lambs is consistently failing to achieve expected growth rates despite good grass availability and effective parasite control, and if clinical signs are observed.

Common signs include:

- Poor growth rates and reduced thrive
- Poor appetite and lethargy
- Weight loss or emaciation in more severe cases
- Tear staining with damp, matted wool below the eyes
- Poor-quality, open fleece
- Anaemia

- Reduced immunity, increasing the risk of clostridial disease, pasteurellosis and parasitic infections

Severe infections may result in head pressing, lethargy and twitching of muscles of the head, neck and ears.

Diagnosing the problem

The most reliable way to confirm cobalt deficiency is through blood testing. Measuring plasma vitamin B12 concentrations provides a good indication of the lamb's cobalt status. Be aware that blood sampling sheep for trace elements within 8 weeks of being given a supplementation of any form (this could be from a lick bucket or a trace element from a wormer) could artificially inflate the results, and will not reflect what the land is providing through the sward.

Sampling six to ten representative lambs from the affected group is usually sufficient. Blood samples should be collected as soon as possible after gathering, as vitamin B12 levels can rise once lambs have been removed from pasture and been confined. Since handling costs are already being incurred, it is often worthwhile checking other trace elements at the same time.

Soil analysis can be useful as supporting information. If your land/certain fields are naturally low in cobalt, then pasture treatment with cobalt sulphate may help to reduce deficiency problems, although it does not act quickly enough to be a treatment in the face of an ongoing deficiency event. Its success however depends on grazing management and weather conditions; it requires frequent reapplication throughout the season and this requirement will be increased if there is heavy rainfall. Furthermore, if soil analysis results show that land is high in cobalt, then deficiency may still occur because cobalt is being locked up due to high manganese levels or because soil is too alkaline.

When investigating poor growth rates, it is important to rule out other common causes before concluding that cobalt deficiency is the problem. A faecal egg count (FEC) should be carried out to confirm that gastrointestinal parasites are not contributing, as even where a worm control programme is in place, anthelmintic resistance may mean treatments are not providing adequate control. Cobalt deficiency and gastrointestinal parasitism often occur together; heavy worm burdens can impair nutrient absorption, while cobalt-deficient lambs are more susceptible to parasitic disease. Poor growth is therefore frequently the result of more than one issue, so both should be considered as part of the investigation. Other health problems, including lameness and orf, can also reduce growth rates and should not be overlooked.

Managing cobalt deficiency

There are relatively few management options available to prevent cobalt deficiency where soils are naturally deficient, so supplementation is often required.

Long-acting cobalt boluses are generally considered the most effective option, providing a sustained release of cobalt over several months. Cobalt can also be supplied through concentrate feeds, provided intake is consistent.

Free-access mineral buckets and licks are generally not recommended as the sole method of supplementation, as individual intakes can vary considerably and some lambs may consume insufficient amounts.

Pasture treatment with cobalt sulphate can also be effective where practical and incorporating legumes (such as clover) into swards may help increase the mineral content of pasture.

Where clinical disease is present, treatment may involve injections of vitamin B12 (cyanocobalamin) or oral cobalt sulphate drenches. Depending on the product used and the level of deficiency, repeated supplementation every three to four weeks (or more frequently for lambs) may be required.

Don't overlook cobalt

Poor lamb growth is rarely caused by a single factor, and cobalt deficiency should always be considered alongside nutrition, parasite burdens and general flock health. However, if a significant proportion of lambs are failing to reach target weights despite otherwise good management, investigating cobalt status could identify a problem that is relatively straightforward to correct.

Working with your vet to investigate poor performance and carrying out appropriate blood testing can help ensure any supplementation programme is both necessary and effective, avoiding unnecessary costs while maximising lamb growth.

COBALT DEFICIENCY in Lambs

A hidden cause
of poor growth
and reduced
performance.

WHY COBALT MATTERS

Cobalt is essential for the microbes in the rumen to produce vitamin B12. Vitamin B12 is used in the liver for energy production, supporting growth, appetite and immunity.



MOST AT RISK

Lambs are most prone after weaning, when they rely on forage to supply them with cobalt. Fast-growing, intensively managed lambs have higher requirements.



WHY IT HAPPENS

Many soils are naturally low in cobalt. Alkaline soils or those high in iron or manganese can "lock up" cobalt, making it unavailable. Cereals, especially whole grains, are also low in cobalt.



PASTURE FACTORS

More intensively managed pastures may have lower cobalt. Using legumes in swards can help increase the mineral content.



RECOGNISING THE SIGNS

- ✓ Poor growth rates
- ✓ Poor quality, open wool
- ✓ Poor appetite
- ✓ Anaemia
- ✓ Lethargy
- ✓ Immune suppression – higher risk of clostridial and pasteurellosis diseases and parasite infection
- ✓ Tear staining – damp, matted wool below eyes
- ✓ Emaciation and death



DIAGNOSIS

- Measure plasma vitamin B¹² levels.
- Sample 6–10 lambs as quickly as possible post gathering, as levels can rise once off pasture.
- Consider testing levels of other trace elements at the same time.
- Soil testing can help identify risk areas but cannot diagnose deficiency in lambs.

MANAGEMENT & PREVENTION



SUPPLEMENTATION

- Slow-release cobalt boluses are the most effective option.
- Cobalt in concentrates can be useful.
- Oral supplementation (drenches) can also be effective.
- Free access minerals (lick buckets) are not effective due to variable intakes.



PASTURE STRATEGIES

- Pasture treatment with cobalt sulphate can be effective but depends on grazing management and weather.
- Use of legumes in pastures can increase mineral content.



TREATMENT

- Injectable vitamin B12 (cyanocobalamin) or oral cobalt sulphate drenches.
- Follow product guidelines – repeat supplementation may be needed every 3–4 weeks.



CONSIDER OTHER FACTORS

Always rule out other potential issues. Carry out a FEC to check parasite burden – even if worm control is in place, resistance may be present. Cobalt deficiency and gastrointestinal parasitism often occur together. Worm burdens can impair nutrient absorption, while cobalt-deficient lambs are more susceptible to parasitic disease. Other problems such as lameness and orf can also cause reduced growth rates.