



Trace element testing and investigation of ill thrift in growing lambs

Achieving optimal growth rates in lambs is crucial to the process of delivering lambs to market when prices are likely to be at their peak. However getting this right can be a challenge in many flocks. Problems with ewe nutrition can impact on pre-weaning growth rates due to poor milk yields. Grazing availability and management can mean lambs do not get the best quality nutrition needed to maximise growth from grass. Poor worm control or undetected anthelmintic resistance can impact on performance and other disease problems, such as lameness and pneumonia can affect the growth rates of lambs. Trace element deficiencies can also have a major influence, commonly causing ill thrift in lambs. The impact can be worse in some years than in others due to differences in weather, grass growth, soil pH, and plant species in the pasture. The longer lambs are kept the more at risk they become from trace element deficiencies and parasitic gastroenteritis (PGE).

Although trace element supplements are routinely and widely used in growing lambs there is considerable merit in carrying out blood testing of weaned lambs in order to monitor the status, determine the deficiencies and target the supplements that are likely to be beneficial. Results of blood tests for copper, cobalt and selenium can also provide information on what is not needed and prevent overdosing of lambs, which in some cases can lead to deaths particularly where too much copper or selenium is given to lambs that are already getting sufficient in their diet. Advice can be provided to HiHealth Flockcare members on the best and most cost effective means of providing trace elements based on laboratory results and your flock situation.

- Deficiencies of important trace elements can have negative effects on production. But, over supplementation, particularly of copper and selenium, when they are not needed can cause lamb deaths due to toxicity.
- Ask your vet to collect clotted (red top vacutainer) and heparinised (green top vacutainer) samples from 6 lambs for copper, cobalt and selenium testing.
- In addition you may wish to submit dung samples to assess worm egg count or why not time your vet's visit at the appropriate interval after anthelmintic treatment to check the treatment has been effective?
- Testing to check whether lambs have been exposed to liver fluke parasites can also be carried out on the same samples to provide information on whether flukicide treatment of sheep is needed.

Copper deficiency in lambs as a cause of ill thrift is probably less of an issue than is typically perceived. However severe deficiencies can lead to thin bones and wool discolouration. Copper deficiency in ewes can lead to lambs with swayback that have difficulty standing and hindlimb weakness. Deficiency can arise due to antagonists such as iron, sulphur or molybdenum in the soil and forage. This may be worse on some pastures and can be worsened where over grazing leads to greater soil intakes. However there are breed differences in the absorption efficiency of copper (for example in continental breeds) and too much copper can lead to poisoning, which can be

chronic or acute. Acute copper poisoning is usually a result of over dosage with copper-containing supplements. Whereas chronic copper poisoning can occur in sheep that receive feed with added copper (such as cattle feed) or receive high levels of concentrates over a prolonged time frame, even where the feed is intended for sheep and has no added copper. In either case there may be deaths and these may be avoided by knowing the trace element status of your lambs.

Cobalt deficiency is a common problem in growing lambs particularly in some regions due to the geology, but also where soil contains elements that affect cobalt uptake by plants and when weather conditions lead to rapid grass growth in spring but summer brings very dry weather. Deficiency leads to reduced appetite, ill thrift and open fleeced appearance, sometimes with eye discharges in those affected. In severe cases there is liver disease which can give rise to signs similar to cerebrotical necrosis (CCN) and lead to death. Cobalt is converted to vitamin B12 in the rumen and so blood levels of vitamin B12 are used to assess cobalt status in sheep.

Selenium, together with vitamin E, is an important antioxidant. Areas of northeast Scotland and southeast England are deficient in selenium. Deficiency causes white muscle disease in lambs and ill thrift. It has also been linked to impaired immunity. In the past when white (benzimidazole) drenches were widely used to control gut worms it is possible that selenium deficiency was less of a problem as many of these wormers contained selenium. An enzyme called glutathione peroxidase (GSH-Px) is measured to assess selenium status in livestock. Care is required in providing extra selenium as every year there are cases of selenium poisoning leading to deaths often due to over supplementation with selenium containing products, so it is important to know the selenium status of lambs before supplementing.

Adopting an effective routine for trace element supplementation can be difficult. There are many trace element supplements available in different formulations from buckets and blocks to oral drenches to boluses to injectable preparations. In addition there are breed differences for example in terms of susceptibility to copper poisoning, geographical differences, in terms of soil levels, and management practices, such as brassica feeding or housing of store lambs, that can affect the requirement for essential trace elements.

It can be difficult to get a handle on whether your current strategy is cost effective, but including blood sampling to monitor for trace elements in your flock health plan may save money from unnecessary gathering of sheep to administer supplements or allow a supplement that provides only the trace elements that will produce a benefit to be selected from the wealth of products out there.

The timing of sampling to assess trace element status may be influenced by the management system. HiHealth Flockcare vets are on hand to offer advice to members on when is the best time to sample based on many factors including the age of lambs, time of year, expected time to finishing. Sampling to monitor sufficiency will be useful at around weaning when many lambs are given trace element boluses. Knowing the trace element status allows only the elements that are needed to be provided. Testing of lambs that are receiving concentrates is generally a waste of time unless lamb growth rates are impaired when trace element testing can be carried out alongside other testing for example to check for worms and fluke.

HiHealth Flockcare members can receive trace element testing of weaned lambs for £99. This package includes copper, cobalt and selenium testing on 6 lambs. Ask your vet to collect clotted (red top vacutainer) and heparinised (green top vacutainer) samples from 6 lambs and provide details of your flock management. In return you will receive discounted testing with specialist veterinary advice on hand to answer your questions. Fluke serology to assess if lambs have been exposed to liver fluke parasites can be added to this package for £41 and faecal worm egg count can also be carried out on a pooled sample from up to 10 lambs for an additional £15. Please provide dung samples from individual lambs which will be pooled at the lab for testing. Anthelmintic resistance is an increasing problem leading to impaired lamb growth rates. Timing sample collection at either 7 days after treatment with a yellow (levamisole) anthelmintic or 14 days after using any other anthelmintic is a cost effective way of checking if the wormer you have used has been effective. The full package costs £155 and includes full veterinary interpretation of lab results and advice on action that can be taken to correct deficiencies if present.