Iodine Deficiency - An Emerging Problem?

One of the effects of the weather over the last year seems to have been an increase in the incidence of iodine deficiency in cattle. Iodine is an essential ingredient in thyroid hormone, and 80% of the body’s iodine is found in the thyroid gland. Primary iodine deficiency is simply due to low levels of iodine in the diet. Secondary iodine deficiency can be due to a variety of causes:

- ‘Locking Up’ of iodine by other elements making it unavailable to the body. Having spoken with Jo Scammel at the recent farm walk it would seem that this can be a particular problem if the soil is high in molybdenum and if the soil structure is wet and compressed.
- Thiocyanate is a compound found in brassicas and legumes (eg clover). It inhibits the uptake of iodine into the thyroid gland.
- Thiouracil is a compound found in brassicas (eg kale). It disrupts the formation of thyroid hormone within the thyroid gland.
- Selenium is required for the conversion of T4 thyroid hormone to the active form T3 therefore selenium deficiency can cause disease. Selenium is a trace element and deficiency can also cause another problem which is known as ‘White Muscle Disease’.

Iodine deficiency classically presents as calves either stillborn, or weak, apathetic, and reluctant to stand or suck causing high perinatal mortality. The disease has also been implicated in a reduction on growth rates, milk production, and fertility. It may also lead to an increased incidence of retained foetal membranes. Do these clinical signs ring a bell? Have you had problems at calving with heifers that are reared off farm? If so give us a call! Perhaps due to the weather this year we have found this problem on a number of farms where there has been no previous history of the disease.

Diagnosis is usually by two methods;
1. Examination of a fresh still born or young dead calf. The thyroid gland enlarges in response to the low levels of iodine and can be weighed / sent for lab analysis.
2. Blood samples. Unfortunately thyroid hormone levels vary too much to be an accurate indicator of iodine levels. PII (plasma inorganic iodine) is a more reliable test, we would normally take 6 samples from cows within the last 2 months of gestation and pool them together as individual testing is expensive. Turnaround of results is not as quick as with most other tests as iodine tests are usually batched monthly.

Supplementation of iodine is most important during the last three months of pregnancy. By far the commonest method is to use intra rumenal boluses which release iodine in a controlled way for 4-6 months following dosing. Painting iodine onto the skin has been used but the body has little ability to store iodine so the process must be repeated at least weekly. Mineral licks, medicated water supplies and pasture fertilisers can all be used to varying effect. Cattle concentrates are often supplemented with iodine.

A swollen thyroid is not always this obvious!

Beef Cattle outwintered on Kale are at risk
**Iodine Deficiency in Sheep**

Much of what is written on the previous page holds true for iodine deficiency in sheep, although we have not seen the same increase in clinical incidence this year as we have in cattle. Affected lambs are often still born, and if born alive they are pot bellied, with scant wool. Thyroid hormone is essential in thermoregulation so affected lambs are particularly vulnerable to hypothermia. An enlarged thyroid is clearly visible in the severe cases shown in the photographs and is often easier to feel than in a calf. As with cattle where supplementation is needed boluses are usually the most effective solution and some studies in New Zealand have suggested a production response in situations where there is no clinical goitre has actually been found. Great care should be taken when choosing a bolus as there is a wide variety available, most contain more than one ingredient and sheep are particularly susceptible to over supplementation and toxicity, for example with copper. The practice can supply you with the correct advice as to which bolus to choose and we can supply the boluses quickly and at a very competitive price.

**Schmallenberg Virus Update**

We have started to see a significant number of birth deformities in cattle which are very suggestive of SBV. Thus far cases have been sporadic and spread across the practice area. In the cases that we have been called out to the calf’s limbs are malformed, twisted and the joints are often fixed in unusual positions which has made several calvings very difficult and we have had to resort to a caesarean section on a number of occasions, including one where the calf was so fixed in position that we needed to perform an embryotomy through the caesarean incision. Presentations can be confusing, and can often appear to be twins so if you are in doubt please give us a call.

We are assuming that the problems in lambing that peaked during December relate to midges carrying the disease across our patch during July / August 2012. We cannot be sure if the pattern of disease in cattle will follow that in sheep but if it does then March and April will be the high risk months.

Earlier in the year we were given to believe that a vaccine would be available in late spring but there has been no more information, as soon as we find out more we will put together vaccine protocols and let all of our clients know.

**Farm Walk and Courses Update**

There was an very good turn out for the first of our Spring farm walks and Jo Scammel gave an excellent presentation on the challenges we face this year in preparing the ground and maintaining a healthy soil base. Her thoughts on aeration of the soil and routine slurry inoculation during the winter were very relevant and it was interesting to see how much information could be gleaned with a spade and a couple of spare minutes. The SWHLI project update demonstrated how far the participating farms have moved on in the control of BVD and Johnes Disease on their farms, and how the changes made can bring huge long term benefits. The date for the second farm walk has been moved to Wednesday 27 March and will be held at Three Bridges Farm kind invitation of David Sheppy. Please call the practice for more details or to reserve a place.

**Communication by email**

We will always send out the newsletter with the monthly accounts, but we are aware that there are a number of clients who don’t get to see it. We are also looking to use emails as well as texts to update clients more quickly than we can using the post. If you would like to be included on the email list then please forward your details to farm@mountvets.com