

Welcome to the first edition of the Agri-Food and Biosciences Disease Surveillance and Investigation Branch (DSIB) newsletter.

The DSIB, as part of the Veterinary Sciences Division at AFBI, provides testing on diagnostic samples and post mortem submissions at AFBI Stormont and AFBI Omagh. With a multidisciplinary team comprising of vets and scientific staff, we carry out a considerable number of post-mortem examinations a year supported by a wide range of tests including histopathology, bacteriology, parasitology, biochemistry and virology methods. Our aim is to continue to provide world class scientific testing and advice in these changing times. We hope to use this newsletter as a platform to keep you informed of changing disease trends, new tests as they become available and advice so you can focus your testing and get the most value for money for your clients. We are aware that the farming community is undergoing an extreme period of change and is under considerable financial pressures. Your feedback is always welcome and we look forward to continuing to work with yourselves and the farming community in the future...The DSIB team.

SUMMARY OF FINDINGS FROM THE LAST QUARTER:

The last quarter saw the usual high numbers of bovine respiratory cases with *Mycoplasma bovis* the most common pathogen identified. 146 bovine abortions and stillbirths were examined in the first quarter and a significant pathogen was detected in 50% of cases with *T. pyogenes* (previously *Arcanobacterium pyogenes*) the most commonly identified pathogen. *T. pyogenes* is a sporadic cause of bovine abortions. 196 ovine abortions and stillbirths were examined during the first quarter and a significant pathogen was identified in 60% of cases with *Toxoplasma* spp the most commonly identified pathogen. Interesting cases from the first quarter included a case of thromboembolic meningoencephalitis (TEME) due to *Histophilus somni* in a year old heifer and a case of fungal rumenitis and abomastitis in two one week old calves. A full report of findings from the last quarter is on our website at www.afbini.gov.uk/articles/diagnostic-reports

PLANT TOXICOSIS OF SHEEP:

Ingestion of plant poisons accounted for over half of the fatal ovine toxicoses submitted to AFBI in 2015. The majority of outbreaks of poisoning by plants occur over the winter months when grass is scarce. A common history is of animals that have recently been moved to new or rented pasture, broke out or have



Figure 1. *Pieris Japonica* "Forest flame"

been brought in to fields closer to the farm, for dosing for example. By far the most common plants seen are those of the Ericaceae family which include Azaleas, *Rhododendron* and *Pieris* species such as "Forest flame". *Pieris* spp in particular account for a large proportion of cases submitted for post mortem. They contain the toxin acetylandromedol which is very poisonous to sheep. Clinical signs occur a few hours after ingestion. The animal will become dull, salivate and may vomit. The animal may develop obvious abdominal pain and may develop nervous signs if it lives long enough. Frequently, the animal will become recumbent and die. There is no specific antidote but supportive therapy may be beneficial. In particularly valuable animals, surgery to remove the toxic leaves from the rumen may be indicated.

BVD TESTING:

Bovine viral diarrhoea (BVD) testing of all calves is compulsory in Northern Ireland since the 1st of March 2016. From this date only calves which have tested BVD negative should be sold. AFBI is the only approved laboratory based in Northern Ireland. Working with most tag suppliers, AFBI is currently testing a large volume of samples for the programme.

Note that confirmatory testing costs are no longer covered by AHWNI. When submitting bloods to check for the presence of BVD virus please include the date of birth of the calf with the submission form. This is because calves aged under 75 days of age must be tested using a RT-PCR test, not an antigen ELISA test. The ELISA test may give false negatives in bloods from calves under 75 days of age if maternal antibody is present. Please also ensure that the correct tag number, including all digits is supplied with any samples submitted so the results can be transferred to the programme database.

www.afbini.gov.uk/articles/what-bovine-viral-diarrhoea-bvd

JOHNE'S PCR TESTING:

If any of your clients are members of the AFBI Cattle Health Scheme for Johne's and are adding animals to their herd please insure faecal testing for *Mycobacterium avium* subspecies *paratuberculosis* of **all** added animals is also carried out. This is irrespective of the age of the animal and is obligatory for herds at Risk level 1 to 4 and strongly recommended for herds at Risk level 5. Herds which join the Johne's disease Risk-level certification programme may move from level 5 to level 1 as they progress in controlling the disease, with herds in the Risk level 1 being associated with the lowest risk of Johne's disease in relation to buying breeding stock from participating herds.

We are pleased to now be able to offer an ISO17025 accredited MAP PCR test for faecal samples. Please contact the AFBI Cattle Health Scheme for more information. www.afbini.gov.uk/articles/afbi-cattle-health-scheme

ANTHELMINTIC EFFECTIVENESS:

Do you have any sheep farmers worried about the effectiveness of the anthelmintics they are using? A simple, cheap way to assess if they **might** have a problem is to perform a "drench test". This involves carrying out post dosing faecal egg counts on a pooled sample from 10 sheep. The time after treatment for faecal collection depends on the anthelmintic being used. Collect samples 7 days after using those of the 2-LV group, the "yellow" drenches and 14 days after using those of the 1 BZ group, "the white drenches" and those of the 3 ML group, the "clear" drenches. The test can be improved by sampling the same sheep before they are dosed. This allows confirmation of a measurable egg per gram count before dosing and provides a rough estimate of the level of parasite reduction achieved. If testing indicates there may be a problem thorough investigation is warranted. Further advice can be obtained from the SCOPS (Sustainable Control of Parasites in Sheep) site at www.scops.org.uk.

CHRONIC COPPER POISONING IN SHEEP:

Copper toxicity is most frequently observed in the Charloais, Texel and Suffolk breeds, and less frequently observed in the mountain breeds. Clinical disease usually occurs when the liver can store no more of the excess copper available and the result is release of copper by the liver. This will occur after weeks or months of accumulation of copper by the liver with release often coinciding with a period of stress on the animal such as movement after a sale in rams or parturition in ewes. The sudden release of copper by the liver causes haemolysis and irreversible damage to the kidney and the brain. **Copper poisoning is slow to develop but sudden in onset.** The eyes and skin become jaundiced and post mortem examination reveals an orange liver, black kidneys and red/brown urine. Biochemistry results show a toxic level of copper in the liver and the kidney.



Figure 2 Jaundice of the sclera and conjunctiva in a sheep with chronic copper poisoning

As liver copper levels may fall during the sudden release of copper from the liver it is important when testing for copper toxicity to analyse both liver and kidney copper levels.

An ovine copper poisoning profile test carried out by AFBI will include creatinine, urea, GGT and GLDH. Although not specific for copper toxicity they do give useful early warning signs that liver damage is occurring. Analysis of copper content in hepatic samples is still the best diagnostic tool currently available. Feeding concentrate feeds containing high levels of copper, excessive administration of copper containing mineral supplements and grazing pastures which have been dressed in pig slurry are typical scenarios in which cases of ovine copper toxicity may present. However diets supplemented with copper even at recommended levels can cause sub clinical toxicity if fed for long enough to vulnerable breeds. Every opportunity to reduce the concentrate intake between lactations should be taken and particular care should be taken with rams as they are usually fed concentrates more regularly especially in anticipation of a show or a sale. Cases of copper toxicity can occur at any time during the year but in 2015 half the cases were diagnosed during July and August.

NORTHERN IRELAND POULTRY DISCUSSION GROUP:

A new discussion group, focused on poultry conditions, met for the first time in February. Members include practicing vets specialized in poultry, a group of AFBI Veterinary Research Officers working with poultry and other AFBI scientists involved in this work. The aim is to improve communication to ensure AFBI provides a world class service tailored to the needs of the local industry.

LOOKING FORWARD TO THE SUMMER:

Lead remains one of the most common causes of fatal toxicity in cattle year on year with most cases diagnosed in late spring and early summer following the turnout of cattle onto pasture. It is vital that herd owners walk their fields before grazing and mowing to check for any discarded sources of lead such as old batteries, bonfire ash, old paint tins or oil cans. Whilst some cases of lead poisoning will exhibit nervous signs and / or blindness some will be found dead.

Clostridial diseases also account for a large number of submissions to AFBI. With most cases of Blackleg diagnosed during the grazing period it is worth reminding herd owners the economic advantage of using one of the available multivalent vaccines available for Clostridial infections and especially to have animals covered before the grazing period.

YOU CAN FIND CONTACT NUMBERS FOR DSIB @
www.afbini.gov.uk/articles/office-hours-and-contact-numbers

