



# afbi

## Northern Ireland Disease Surveillance Report, July to September 2023

- Lungworm infection in calves
- Septic phlebitis in a cow
- Haemonchosis in ewes and lambs
- Septicaemic pasteurellosis in lambs

These are some of the matters discussed in the Northern Ireland animal disease surveillance quarterly report for July to September 2023

## CATTLE:

### Respiratory diseases

#### Parasitic pneumonia

During the reporting period, numerous cases of parasitic pneumonia due to infection with *Dictyocaulus viviparus* (FIGURE 1) were diagnosed in first season calves at grass. The first cases were recorded in early July and it was noted that in some cases there appeared to be a shortened life cycle due to rapid development of pasture larval stages. Co-existent bacterial, viral and mycoplasmal infections were common.

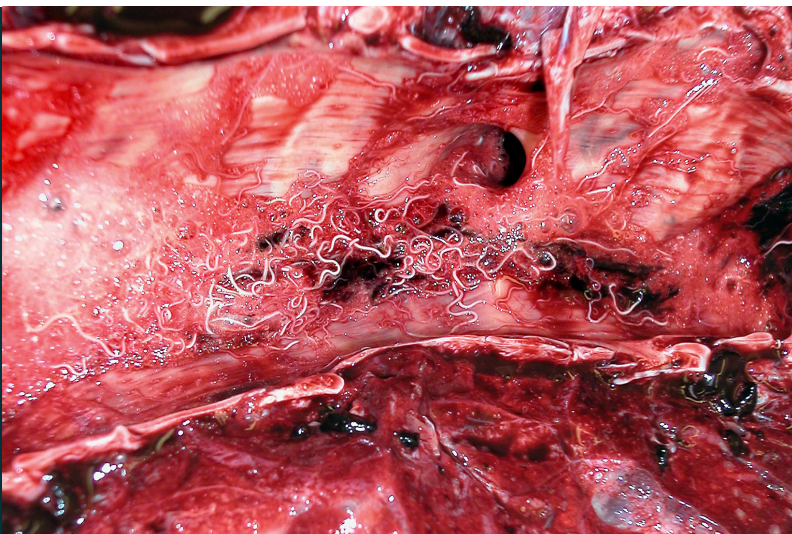


FIGURE 1: *D. viviparus* in the trachea of a calf

### Reproductive and mammary diseases

Udder cleft dermatitis (UCD) was diagnosed in a 5 year old dairy cow submitted with a history of dyspnea and drop in milk yield. At necropsy there were characteristic skin lesions with necrosis, cellulitis and associated septic phlebitis, leading to suppurative pneumonia (with an embolic distribution). UCD can adversely affect cow welfare and may increase mastitis risk. Haemorrhage following invasion of subcutaneous veins has been reported and embolic spread of bacteria can predispose to septicaemia or suppurative pneumonia from which recovery is unlikely. Cow risk factors include large forequarters and increasing udder mass. Herd-level risk factors include short cubicles and the use of mattresses. Monitoring cows in the parlour every two weeks for evidence of UCD will aid detection of lesions at an early stage, reduce the risk of lesions becoming chronic, improve treatment success and safeguard cow welfare.

#### Abortion due to *Salmonella* Dublin infection

Abortion due to *S. Dublin* infection was common during the quarter with clusters of abortions occurring in many affected herds. Problems with salmonellosis, most usually *S. Dublin* were also seen in older calves sometimes in conjunction with abomasal acidosis and bloating.

## Neurological diseases

### *Clostridium botulinum* type C / D toxicosis

A significant outbreak of botulism in a dairy herd was investigated using the usual necropsy and testing protocols. Gross and histological findings are non-specific in cases of botulism and very often both are unremarkable. Diagnosis therefore relies on brain histology to rule out as far as possible other central nervous system disease; testing for levels of calcium, magnesium, phosphorous and beta-hydroxy-butyrate in eye fluid; Rensch testing for presence of heavy metals in rumen contents and measurement of kidney lead levels. Most importantly rumen and small intestine contents are tested by ELISA for presence of *Cl. botulinum* C/D toxin, culture supernatants are similarly tested.

In this case, toxin was detected in the rumen and small intestine contents without culture, which is the best determinant of a positive diagnosis. The source of the problem was believed to be a dead bird or birds, fragments of which had been spread around by grass cutting activity.

Unusually, meningoencephalitis was also found by histological examination of the brain tissue of one case. There was severe acute localized meningitis with vasculitis and petechiation; acute necrotizing vasculitis mainly affected the peri-ventricular cortex, the cerebellum and the brainstem. The histological pattern of meningoencephalitis was considered unusual, and it is likely that this infection was secondary to botulism and not a result of botulinum toxicosis.

### Black disease

Black disease was diagnosed in an adult dry cow. At gross post-mortem examination, the carcass was found to be intensely congested, particularly the omentum. There was subcutaneous gelatinous oedema, and the liver was congested and rather enlarged, with a circumscribed pale lesion in the hepatic parenchyma, typical of black disease. *Clostridium novyi* antigen was demonstrated in the lesion by immunofluorescence.

### Necrotising cellulitis

Necrotising cellulitis was diagnosed in a thirty-month -old bull presented with a history of sudden onset facial swelling and inappetance. At necropsy, the carcass was thin, with an 'empty' appearance. There was bilateral swelling of the lower jaw and cheeks, extending along the ventral neck to the thoracic inlet. On incision, a very extensive fibrino-necrotic cellulitis extended throughout the affected area, and there was a pungent necrotic smell. There was a large full-depth ulcer with a fibrino-necrotic base, close to the frenulum of the tongue, on the left side. This was considered likely to be the source of infection. On histological examination the fibrinonecrotic cellulitis was found to be associated with extensive colonisation by fusiform bacteria.

## SMALL RUMINANTS: SHEEP

### Alimentary diseases

#### Haemonchosis

*Haemonchus contortus* (FIGURE 2- next page) is relatively uncommon in sheep in Northern Ireland with most infections hitherto being reported in imported camelids. The 2023 summer grazing season was notable therefore for the significant number of cases seen in both lambs and ewes. Sudden

death of lambs often was the most common presentation and carcasses were anaemic with blanching of the mucous membranes, anasarca throughout the carcass with very pale and watery small and large bowel contents. In some cases live active worms could be demonstrated and worm counts of between 20,000 and 75,000 were recorded in the abomasal contents. Liver histology typically revealed centrilobular bridging hepatoparenchymal necrosis, consistent with hypoxia due to anaemia. Intercurrent nematodiosis was sometimes a feature. The reason for the upsurge is not fully clear but is believed to be related to the 2022 and 2023 summer weather creating ideal conditions for survival of pasture larval stages.



FIGURE 2: *Haemonchus contortus*; hitherto rare in sheep in Northern Ireland, but the cause of major problems in some flocks in summer 2023

### Septicaemic pasteurellosis

Septicaemic pasteurellosis due to infection with *Bibersteinia trehalosi* was common in first season lambs in September. This disease typically affects spring born lambs in their first autumn. Intestinal parasitism was present in many cases and parasitic gastro-enteritis and coccidiosis are amongst the identified risk factors for the disease. The wet and windy weather experience during the late summer and early autumn was also considered to be an important stress factor. Septicaemic carcasses often show enlargement, haemorrhage and necrosis of the retro - pharyngeal lymph nodes and erosions of the oesophageal mucosa may be present. The lungs are congested and oedematous with a deep purple colouration.