

OVERVIEW

- **Congenital deformities as a result of *in utero* Schmallenberg infection in beef calves from two herds in north-east Scotland**
- **Losses due to haemonchosis in freshly lambed ewes**
- **Clostridial enteritis in neonatal piglets**
- **Avian tuberculosis in a Crollwitzer turkey**

DISEASE ALERTS

The following conditions were reported by SRUC VS disease surveillance centres in July 2025. Given similar climatic and production conditions, they could also be important this year.

Coronavirus nephritis in adult pheasants

Nephritis due to gamma-coronaviruses (including infectious bronchitis virus) occurs sporadically in adult pheasants and is particularly associated with stress. Sudden death of apparently healthy birds can occur, and the mortality rate can be high. The kidneys are enlarged and the liver and heart may have a white appearance due to urate deposition (visceral gout). PCR testing of kidney tissue and histopathology will confirm the diagnosis.

Abomasal emptying defect in sheep

Affected sheep progressively lose condition and develop abdominal distension with death occurring after a few weeks to months despite nursing and supportive treatment. Striking enlargement and impaction of the abomasum (and forestomachs to a lesser extent) is found on postmortem examination. Abomasal emptying defect is believed to be a toxin-induced, acquired dysautonomia. It has been recorded in a number of breeds however, a genetic predisposition is likely with most reports involving Suffolk sheep.

GENERAL INTRODUCTION

The mean temperature in April was 7.4°C which is 0.8°C above the 30-year average. It was a sunny month with 137 per cent of average sunshine hours and a rainfall figure equivalent to 117 per cent of the 1991 to 2020 average.

CATTLE

Nutritional and metabolic disorders

Two, two-month-old Limousin cross suckled calves from a group of 12 housed with their dams developed neurological signs and died. Pyrexia was not a feature. The third case was euthanased after being found recumbent and hyperaesthetic. The carcass was in good body condition, and postmortem examination plus histopathology failed to detect any disease process to explain the clinical signs. Analysis of kidney ruled out the possibility of lead poisoning. The rib Ca:Mg ratio of 111.2 was diagnostic for hypomagnesaemia (reference range <70). Hypomagnesaemia in calves is most common in well grown animals on a milk only diet. Provision of mineralised creep feed will reduce the risk.

Generalised and systemic conditions

An Aberdeen Angus stock bull was submitted for postmortem examination after being observed to collapse and die over the course of a few minutes. No prior ill health had been noted. It was the twelfth animal to die in a 400-cow Holstein herd over the course of four months with all deaths occurring in the dry cow section of the cubicle shed. Four cows had previously been submitted with no significant findings on postmortem examination or extensive follow up testing to account for their sudden deaths. There was no evidence of infectious disease, a nutritional issue or a toxic cause, and histopathology was unrewarding. CCTV was installed in the shed and captured the deaths of two cows and the bull with an acute cardiac event or electrocution the main

differential diagnoses. Electrocutation was considered to be the most likely cause and is often a diagnosis of exclusion. The dry cows were relocated and no further deaths have occurred. Voltage monitoring devices were installed and investigations are ongoing.

Alimentary tract disorders

An organic dairy herd reported five late lactation cows with reduced dry matter intake and milk drop during the previous month. A three-year-old Friesian presented similarly but then deteriorated and died. Postmortem examination detected volvulus of the omasum and abomasum with significant accumulation of dark brown fluid in the abomasum, and a large volume of semiliquid ingesta in the rumen and reticulum. Volvulus involving the omasum in addition to the abomasum carries a poorer prognosis than abomasal displacement alone possibly due to more severe vascular and nerve damage.¹ There were no other findings that could shed light on the earlier cases of milk drop.

Respiratory tract diseases

A 250-cow unit breeding Belgian/British blue cross cows to Limousin bulls submitted a four-week-old calf with a week-long history of upper respiratory tract noise. Seven similar cases had been seen in 2025 with smaller numbers in preceding years. The response to treatment was very poor and the case fatality rate was high. Any surviving calves failed to thrive and often relapsed. Postmortem examination confirmed necrotic laryngitis (Fig 1) from which *Fusobacterium necrophorum*, *Trueperella pyogenes*, *Bibersteinia trehalosi* and a *Bacteroides* sp were cultured. A farm visit was carried out and possible risk factors identified included Belgian/British blue genetics and glyphosate treated barley straw which created very dusty conditions when pens were bedded using a straw blower. Glyphosate is applied one to three weeks pre-harvest to control weeds

and improve cereal storability. It was suggested that very good growth rates combined with laryngeal anatomy and inhalation of particulate matter could be contributing to the problem. Double-muscled breeds can have narrow larynxes with high air velocity increasing the risk of injury. Switching to less dusty straw and turning calves out as soon as possible was suggested.



Figure 1 – Asymmetry of the cerebral hemispheres as a result of in utero infection with Schmallenberg virus

Reproductive tract conditions

A full-term foetus and placenta were submitted after three of four Jersey heifers gave birth to stillborn calves. The inter-cotyledonary membrane was noted to be oedematous, and the cotyledons had a yellow appearance. Microscopic examination of a modified Ziehl-Neelsen stained smear of placenta identified organisms suspicious of *Coxiella burnetii* which was confirmed on PCR. Histopathology identified a suppurative placentitis and a focal myocarditis confirming an infectious aetiology. A previous diagnosis of Q fever had been made a few years before, but a vaccination programme was not in place. In that instance the affected heifers had been reared away from home with exposure to *C. burnetii* thought to

occur on their return prior to calving. The farmer and vet were reminded of the zoonotic potential of this organism and APHA were informed.

Schmallenberg virus (SBV) was confirmed as the cause of congenital deformities in calves from two holdings in the north-east of Scotland. In the first case delivery of the affected calf required a partial embryotomy due to a breech presentation and arthrogryposis of all four legs. Postmortem examination identified cavitated brain lesions. Two calves with arthrogryposis were born in the second herd with one submitted for investigation. This animal had severe scoliosis and an asymmetrical appearance to the cranium with a corresponding discrepancy in the size of the right and left cerebral hemispheres (Fig 2). SBV virus was detected on PCR testing of brain tissue in the first calf and amniotic fluid in the second. Foetal fluids tested positive for antibodies to SBV in both.

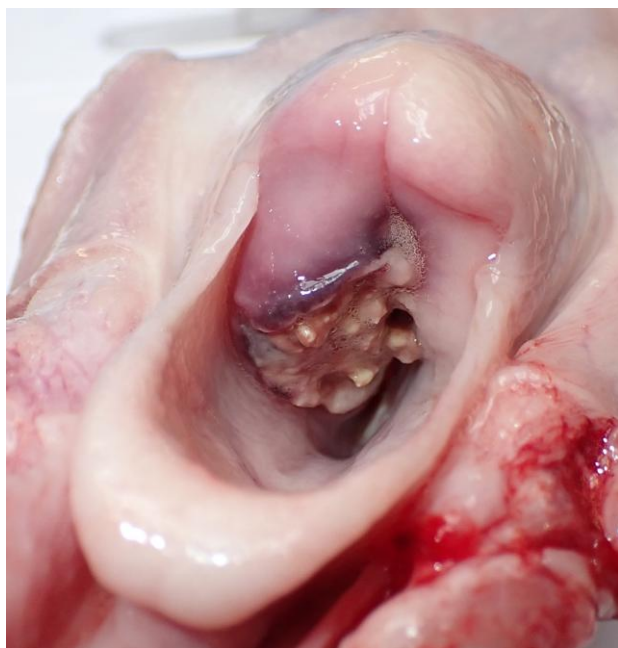


Figure 2 – Necrotic laryngitis in a four-week-old suckled calf

Circulatory system disorders

A ten-day-old shorthorn heifer calf was found collapsed and died 24-hours later despite antimicrobial treatment. It was the only death from a group of six. Externally the conjunctivae and oral mucosae were pale and there was black faecal staining. Petechial haemorrhages were visible on the ears and gingivae. Further haemorrhages were found subcutaneously over the limbs, neck and thorax, with extensive petechiation of the lungs, heart, liver, kidneys and spleen. Histopathological examination of sternal bone marrow confirmed a diagnosis of trilineage hypoplasia. These cases may have a genetic association or may relate to maternal alloantibody production. In most instances they are sporadic cases, but worthy of investigation in case a common trigger factor comes to light as happened following the introduction of Pregsure® vaccine.

SMALL RUMINANTS

Nutritional and metabolic disorders

The carcass of a six-year-old mule ewe was submitted following the sudden death of two ewes from a group of 30 within a 24-hour period. Both had been rearing two-week-old twin lambs which were reported to be well grown. Postmortem examination was complicated by autolysis however; no significant abnormalities were identified. Hypomagnesaemia was suspected in the absence of obvious infectious disease. This was confirmed on analysis of vitreous humour with a result 0.48 mmol/l below the reference range (>0.65 mmol/l). The risk of hypomagnesaemia in grazing ewes is highest three to five weeks after lambing when milk yields peak. A mineral lick tub had been provided but it is recognised that intakes can vary between individual sheep.

Parasitic diseases

A group of 100 Suffolk ewes was housed for lambing on 1st March and turned out again on 25th March. A carcase plus viscera from a second ewe were submitted 19 days later after five ewes died in one week. The group were reported to be thin as a result of poor grass availability however, several ewes had developed submandibular oedema. The submitted ewe was very autolysed but had a high strongyle egg count of 20150 eggs per gram (epg). A faecal sample was sent for peanut agglutinin (PNA) testing which identified 80 per cent of the eggs as *Haemonchus contortus*. Large numbers of adult *H. contortus* worms were detected within the abomasum of the submitted viscera. The ewes had been treated with ivermectin around one month before death. The timescale suggested that the *H. contortus* were emergent secondary to a combination of nutritional stress and the periparturient reduction in immunity rather than a consequence of infectious larvae ingestion post turn out. However, if the ivermectin treatment had been effective it would have been expected to remove hypobiotic *H. contortus*. It was advised that an anthelmintic was administered to the remaining ewes, and that efficacy testing was carried out.

Generalised and systemic conditions

A shepherd complained that fifty per cent of the lambs in one group of 70 ewes rearing twins had lost condition since moving field. Fifteen lambs had died and a range of clinical signs had been seen including sudden deaths, faecal staining and fine tremor. Ewe body condition and milk yield were reported to be good and lambs in other fields were growing well. Three, two to three-week-old lambs were submitted and ticks were observed on two of the carcases. The first had profuse diarrhoea and was diagnosed with cryptosporidiosis and secondary nephrosis. Histopathology

suggested that bacterial septicaemia was the cause of death in the other two, and splenic tissue from all three tested PCR positive for *Anaplasma phagocytophilum*. No evidence of louping ill was detected. Immunosuppression due to tick borne fever was considered the underlying issue and tick control was advised for naïve animals moving onto that field in the future.

Alimentary tract disorders

A three-day-old Scottish blackface lamb that had stood and sucked without assistance developed black diarrhoea, deteriorated rapidly and died. It was the third similar case in lambs born to a group of 200 ewes at grass. The ewes were reported to be in good body condition and had received a clostridial booster vaccination one month before lambing commenced. Postmortem examination found a section of the jejunum to be emphysematous with mucosal inflammation and serosal haemorrhages. Lamb dysentery was suspected and confirmed on histopathology with beta toxin detected in small intestinal contents. The zinc turbidity test (ZST) result of 32 units (target >14 units) confirmed adequate transfer of maternal colostral antibodies.

The carcases of two, seven to ten-day-old lambs from a second outdoor lambing flock were submitted with a history of diarrhoea that was unresponsive to treatment. These lambs also had an emphysematous, haemorrhagic enteritis with lamb dysentery confirmed on histopathology. Beta toxin was detected in the small intestinal contents of one. The ewes had been vaccinated appropriately and a ZST result of 41 units confirmed adequate, timely ingestion of colostrum in the tested lamb. Cases of lamb dysentery are most commonly encountered in flocks that do not vaccinate against clostridial diseases. Different products had been used in these two flocks suggesting that there was no link between

them. Improper storage, or failure of a small number of ewes to respond are possible explanations for the apparent failure of vaccine efficacy.

Reproductive tract conditions

A flock of 170 ewes reported that almost half of the first 18 ewes to lamb had given birth to a normal lamb accompanied by a twin that was either autolysed or had an enlarged abdomen. One of the latter was born to a four-year-old Highlander ewe and submitted for postmortem examination. The abdomen and thorax were found to contain gelatinous fluid and there was a 3cm long tear in the diaphragm. A large multiloculated structure with thick oedematous walls was found attached to the right side of the liver with fluid contents which were leaking into the abdomen from multiple sites. A diagnosis of congenital hepatic cyst was recorded and was considered likely to be a one-off case.

PIGS

Generalised and systemic conditions

The carcasses of four neonatal piglets were submitted to investigate losses in a group of 25 housed sows with approximately 40 piglets. Five piglets had died and another six were ill. Affected animals were either found dead or observed to have diarrhoea which was haemorrhagic in some cases. If found alive they deteriorated rapidly and died. Postmortem examination found that a section of jejunum was emphysematous and haemorrhagic in all cases (Fig 3) and clostridial enteritis due to *Clostridium perfringens* type C was suspected. This was confirmed on histopathology, and beta toxin was detected in small intestinal contents from all four piglets. Only one blood sample was suitable for ZST analysis, and the result of 1.9 units (target >20 units) confirmed hypogammaglobulinaemia. Vaccination of the sows, ensuring timely intakes of colostrum and

improved environmental hygiene was recommended.



Figure 3 – Emphysematous enteritis in a piglet due to *Clostridium perfringens* type C

BIRDS

Generalised and systemic conditions

A two-year-old Crollwitzer turkey lost weight, became very dull and was euthanased to investigate a long-term problem with cases of ill thrift and death in a group of homebred adult turkeys. Affected birds were reported to ultimately develop yellow diarrhoea with death three to four days later. The seven remaining birds had access to a house and a fenced off outdoor area that had been used for turkeys for a long time. There were no health issues in the young pullets being reared on separate ground. The carcass was emaciated with no evidence of food in the crop or proventriculus/gizzard. A single 1cm diameter firm white nodule was found in the left lung. The liver was swollen and the parenchyma had been extensively replaced by a large number of granulomas up to 6cm in diameter (Fig 4). Smaller numbers of similar lesions were found in the spleen with three more within the wall of the small intestine. Large numbers of acid-fast bacteria were detected on a Ziehl-Neelsen stained smear of liver confirming a diagnosis of avian

tuberculosis. Introduction of infection can occur via purchased birds but was unlikely in this case with wild birds the probable source. Turkeys are reportedly less susceptible to avian tuberculosis than chickens but based on the history it was advised that there was likely to be significant environmental contamination with other birds in the group liable to be infected. *Mycobacterium avium* subspecies *avium* can persist in soil for several years and it was recommended that no turkeys were added to the group or penned area.



Figure 4 – Bacterial hepatitis due to avian tuberculosis in a turkey

References:

1 Constable PD, St. Jean G, Hull BL *et al*.
Prognostic value of surgical and
postoperative findings in cattle with
abomasal volvulus. *J Am Vet Med Assoc* 1991;
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