

OVERVIEW

- **Systemic mycosis in a suckled calf**
- **Sporadic neoplasia as a cause of weight loss in individual ewes**
- **Herpes virus-associated inclusion body rhinitis in piglets**

GENERAL INTRODUCTION

The mean temperature for February was 0.7 °C above the long-term average. It was a wet month in most areas with 153 per cent of average rainfall overall. Sunshine was below average in the west with an overall figure of 96 per cent of average.

DISEASE ALERTS

The following conditions were reported by SRUC VS disease surveillance centres in May 2021. Given similar climatic and production conditions, they could also be important this year.

- **Coccidiosis in suckled calves**
The incidence of coccidiosis in suckled calves peaks at one to two months of age and risk reduction strategies should be targeted towards this period. The number of diagnoses in the youngest calves increases in years where prolonged, cold spring weather and poor grass growth delays turn out.
- **Pasteurella septicaemia due to *Mannheimia haemolytica* in lambs**
Mannheimia haemolytica infection in young lambs is often peracute and septicaemic rather than pneumonic. Postmortem examination of lambs that have been found dead may not be diagnostic and further testing is required to confirm the diagnosis. Sampling a minimum of two organs for bacterial culture (e.g. liver and lung) is recommended. Storing a range of tissues in formalin is advised as *Pasteurellaceae* bacteria can be difficult to recover when there is a delay between sampling and initiating culture.

CATTLE

Generalised and systemic conditions

A three-month-old Charolais calf died following a week-long period of malaise and was submitted for investigation of suspected pneumonia. However, the cause of death proved to be a severe fibrinous peritonitis with extensive adhesions leading to strangulation of the distal small intestine. The rumen mucosa had sloughed but multiple circular lesions were evident on the submucosa (Fig 1), and the wall of the reticulum was thickened and haemorrhagic. There was localised lung consolidation and evidence of necrotic laryngitis. The liver was rounded with multiple pale pink circular lesions throughout the parenchyma. Histopathology showed these to be areas of acute coagulative necrosis with fungal hyphae present within the central veins and surrounding tissue. Examination of further tissues confirmed a systemic mycosis with involvement of the lung, larynx, intestines and peritoneum. *Mucor* sp was isolated from the larynx and rumen, and mixed *Aspergillus* spp were cultured from the lung. The histopathologist noted a striking lack of inflammatory response suggesting an underlying immunosuppression. PCR testing for bovine viral diarrhoea virus was negative and the cause remained unclear.



Figure 1 – Fungal rumenitis in a suckled calf

A group of 40 two-year-old in-calf Holstein heifers overwintered on grass and big bale silage broke into an area of woodland. They were returned to their field, but the next day one animal was ill and reluctant to walk. It was treated with antibiotics but died overnight and was submitted for postmortem examination to investigate the possibility of plant poisoning. This was excluded but the

cause of death remained unclear with no significant findings on bacteriology, no evidence of hypomagnesaemia/hypocalcaemia and negative clostridial toxin tests. Histopathology detected myocardial degeneration/necrosis extensive enough to be the cause of death, an acute - subacute necrotising hepatopathy and evidence of pleuritis and bacterial septicaemia. The cardiac lesions were not typical of nutritional myopathy (white muscle disease) and the changes were considered to be secondary to another disease process such as disseminated intravascular coagulation. Recent low grade bacterial septicaemia together with stress from the breakout were thought to be the exacerbating factors in the death of this animal.

Respiratory tract diseases

An on-farm postmortem examination was carried out after two animals from a group of 10 died within 48 hours of arriving on the holding. Seven of the cattle were reported to be pyrexia and dyspnoeic. Lung consolidation was described and *Mannheimia haemolytica* was isolated in profuse pure growth from the submitted tissue. Histopathology confirmed a severe, acute bacterial pneumonia consistent with *M. haemolytica*.

A 400 cow dairy herd reported an ongoing problem with sudden onset respiratory disease, pyrexia and epistaxis in approximately six cows every year. There was no pattern with regards to age or stage of lactation and affected animals either died or were culled due to poor milk yield. An on-farm postmortem examination was carried out and half a lung submitted for further investigation. Findings were consistent with embolic pneumonia as a result of haematogenous spread of bacteria from elsewhere in the body. Hepatic abscesses impinging on the caudal vena cava, chronic skin and hoof infections are possible sources of bacterial emboli in cattle. *Fusobacterium necrophorum* was cultured from the lung and multiplex PCR testing failed to detect evidence of pneumotropic viral or bacterial infection. Udder cleft dermatitis was suspected to be the primary focus of infection as the private veterinary surgeon had confirmed the presence of mild skin changes on examination of the cow. Septicaemia secondary to udder cleft dermatitis had been diagnosed on the farm in 2021.

Reproductive tract conditions

A three-year-old shorthorn cow aborted at approximately six months gestation and the foetus and placenta were submitted for investigation. It was the second cow to abort from a herd of 250 spring calvers and had also lost its calf in 2021. *Campylobacter* abortion had been diagnosed in previous years, but this animal was reported to have been managed as part of a "clean"

group. Despite this *Campylobacter fetus venerealis* was isolated from both foetal stomach contents and placenta. The possibility of inadvertent failure of segregation and mating with an infected bull was suggested.

SMALL RUMINANTS

Nutritional and metabolic disorders

A triplet-bearing mule ewe was found recumbent at grass three to four weeks pre-lambing. It was noted to be thin and was treated for suspected pregnancy toxemia but was euthanased after failing to improve. It was the only affected animal from a group of 170 ewes that were generally in good body condition. The liver was pale yellow consistent with fat mobilisation and, despite external appearances, large deposits of abdominal fat remained. An aqueous humour beta-hydroxybutyrate (BOHB) result of 3.4 mmol/l (reference range < 2.5 mmol/l) confirmed acetonemia. Only five very long loose incisors remained, and several molars were missing or loose suggesting that broken mouth was the predisposing factor in this case.

A 21-month-old Portland ewe was diagnosed with multiple problems after being submitted from a small flock of 50 with a history of weight loss, recumbency and death in a number of sheep. The sheep were outwintered at grass, but a group of 12 thin animals had been housed for supplementary feeding. The liver was pale and friable and sections of cut tissue floated when placed in fixative suggesting significant infiltration by fat. The faeces were diarrhoeic and a multiloculated abscess was found within the mesenteric lymph node. Approximately 25,000 *Teladorsagia* sp worms were recovered from the abomasum and a further 3,600 *Nematodirus* sp worms from the small intestine. *Yersinia pseudotuberculosis* was isolated from the liver and was suspected to have ascended from the intestinal tract where nematode damage was likely to have favoured its establishment. Histopathological changes of severe chronic active vacuolar hepatopathy and abundant brown pigment within sinusoidal and portal macrophages were consistent with ovine white liver disease which is an uncommon diagnosis in mature sheep. This was supported by a low liver cobalt result of 0.03 mg/kg dry matter (DM) (reference range >0.06 mg/kg DM). Liver selenium was also low at 0.17 mg/kg DM (reference range 0.9 to 3.5 mg/kg DM). No significant organisms were isolated from the mesenteric abscess but antibodies to caseous lymphadenitis (CLA) were detected. Blood and faecal sampling additional animals to further investigate worm burdens, trace element status and the extent of flock exposure to CLA was advised.

Alimentary tract disorders

A four-year-old Cheviot ewe was submitted for postmortem examination to screen for iceberg diseases after it became the second ewe to be found dead following a period of weight loss. Despite significant autolysis, multiple firm areas containing irregular pale patches were visible within the liver (Fig 2) and similar pale nodular lesions were found in the kidneys. Neoplasia was suspected and histopathology detected an infiltrative cellular population associated with prominent fibrosis. Autolysis hampered interpretation but a malignant epithelial neoplasm such as an adenocarcinoma was considered to be the most likely cause.



Figure 2 – Liver neoplasia in a Cheviot ewe

Musculo-Skeletal conditions

An eight-day-old beltex ewe lamb was found recumbent and treated with antibiotics, NSAIDs and vitamin E/selenium. Only a slight improvement was seen, and it died a week later. Postmortem examination detected purulent synovial fluid in the left elbow and bilaterally in the carpal, hock and stifle joints. Excess fluid was observed in the atlanto-occipital joint. *Streptococcus dysgalactiae* was isolated from multiple affected joints and is the most commonly diagnosed cause of septic arthritis in lambs. Oxytetracyclines are not recommended to treat cases of *S dysgalactiae* arthritis as the majority of isolates are resistant in vitro, however antibiotic sensitivity testing showed that on this occasion the isolate was sensitive.

Circulatory system disorders

A yearling blue Texel ewe lost condition over a few weeks and was euthanased after thoracic ultrasonography identified a suspicious lesion. Postmortem examination revealed a 20 cm diameter friable, well vascularised dark red/black mass in the

mediastinum dorsal to the heart and adhered to the adjacent lung lobe and trachea (Fig 3). Histopathology showed that the mass was comprised of sheets of pleomorphic round cells with frequent mitotic figures and multiple areas of necrosis and haemorrhage. The findings were consistent with neoplasia, most likely lymphoid in origin. Lymphosarcoma is the most commonly diagnosed lymphoid tumour in sheep and this was considered to be a one-off case with no implications for the rest of the flock.

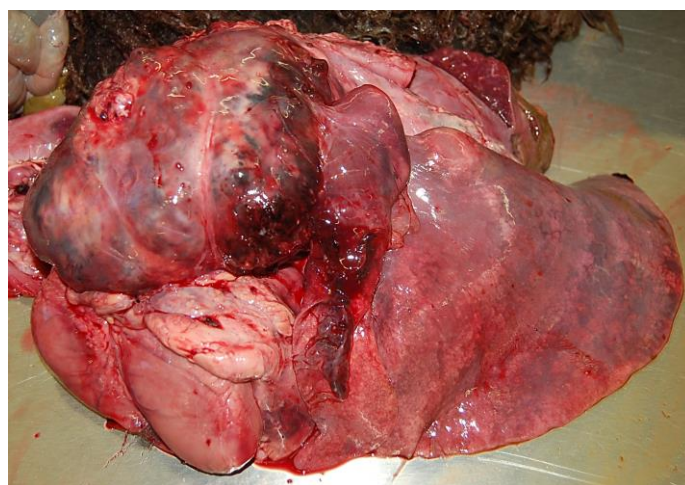


Figure 3 – Mediastinal mass in a Texel ewe

PIGS

Alimentary tract disorders

Three thin, hypothermic large white cross piglets were submitted at three days-of-age to investigate an outbreak of neonatal diarrhoea. Surviving piglets were ill thriven and often experienced a second episode of diarrhoea around weaning. The intestinal tracts of two were found to contain yellow liquid/mucoid content with scant material in the third. Pulsed agar gel electrophoresis testing identified rotavirus type C in one and an untypeable rotavirus in a second. Histopathology confirmed a viral enteropathy and highlighted that there was little evidence of colostrum absorption. This was consistent with zinc turbidity test results of 1, 3 and 10 units (reference range >20 units) and hypogammaglobulinaemia was considered to have predisposed to the problem. In order to optimise colostrum production sows should be fed an appropriate diet during pregnancy, stress should be minimised in the period around farrowing and there should be unrestricted access to fresh water at all times.

Respiratory tract disease

A herd reported that 20 per cent of a group of 250 piglets were sneezing and ill thriven with clinical signs persisting post weaning. Postmortem examination of a three to four-week-old duroc cross pig revealed deformation of the nasal turbinates (Fig 4) and a suppurative exudate occluding the nasal passages. *Pasteurella multocida* and *Trueperella pyogenes* were isolated from the affected area. Histopathology identified epithelial degeneration of the sub-mucosal glands associated with viral inclusion bodies, and a severe chronic, active exudative rhinitis. It was suggested that the widespread destruction of the glands was likely to have affected normal secretory processes impairing immune defences and allowing establishment of secondary bacterial infection. Herpes virus-associated inclusion body rhinitis with secondary bacterial rhinitis was the final diagnosis.



Figure 4 - Herpes virus-associated inclusion body rhinitis in a pig