

REGIONAL VETERINARY LABORATORIES REPORT

July 2025

Regional Veterinary Laboratories (RVLs) carried out necropsy examinations on 456 carcasses and 17 fetuses during July 2025. Additionally, 2,299 diagnostic samples were tested to assist private veterinary practitioners with the diagnosis and control of disease in food producing animals. This report describes a selection of cases investigated by the Department of Agriculture, Food and the Marine's (DAFM) veterinary laboratories in July 2025.

The objective of this report is to provide feedback to veterinary practitioners on the pattern of disease syndromes at this time of the year by describing common and highlighting unusual cases. Moreover, we aim to assist with future diagnoses, encourage thorough investigations of clinical cases, highlight available laboratory diagnostic tools, and provide a better context for practitioners when interpreting laboratory reports.

Cattle

Pneumonia and enteritis were the most common diagnoses at necropsy in cattle in the RVLs during July 2025.

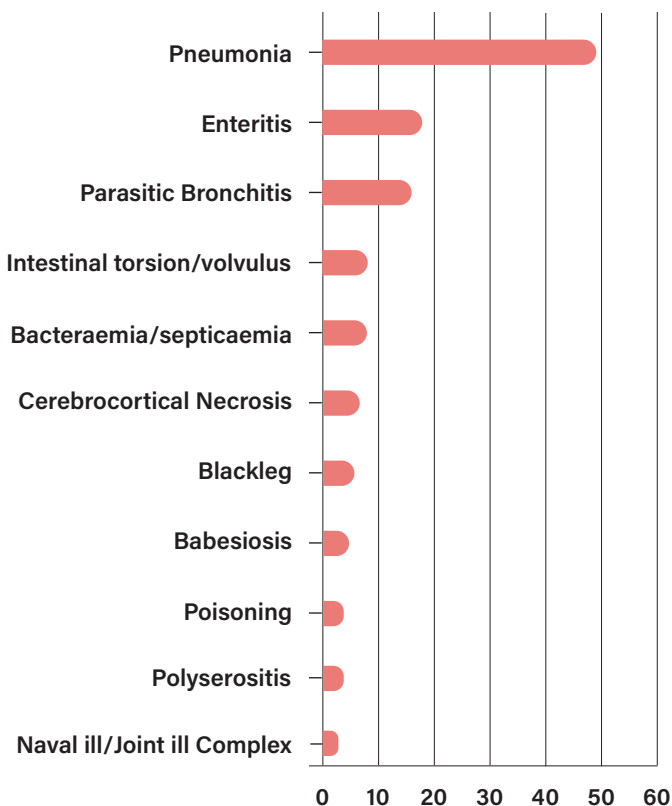


Table 1: The most common diagnoses in cattle submitted for necropsy in July 2025.

Gastrointestinal Tract

Parasitic gastroenteritis

A yearling with a history of weight loss was submitted to Kilkenny RVL. There were three others in the group in poor body condition. On necropsy, there was severe abomasal fold oedema and liquid intestinal contents. 100 strongyle eggs per gram (EPG) were detected on McMaster examination. There were no other significant laboratory findings. On histopathology, there was multifocal lymphocytic and eosinophilic abomasitis, with gland ectasia and hyperplasia of mucous neck cells and diffuse abomasal oedema. The histopathology lesions were suggestive of parasitism. Additional samples were requested from cohort animals.

Intestinal torsion

A ten-week-old calf was submitted to Kilkenny RVL with a history of sluggishness and dyspnoea before it died. It was the second case on the farm. On post-mortem examination, there was an intestinal torsion. Laboratory tests indicated an acidic rumen pH. The cause of torsions is usually unknown; however, a variety of factors can predispose to the development of this condition. It may occur subsequent to increased or decreased gastrointestinal motility, which in turn can be affected by enteritis, nutritional changes, gas bloat, and acidosis. A review of diet was advised.

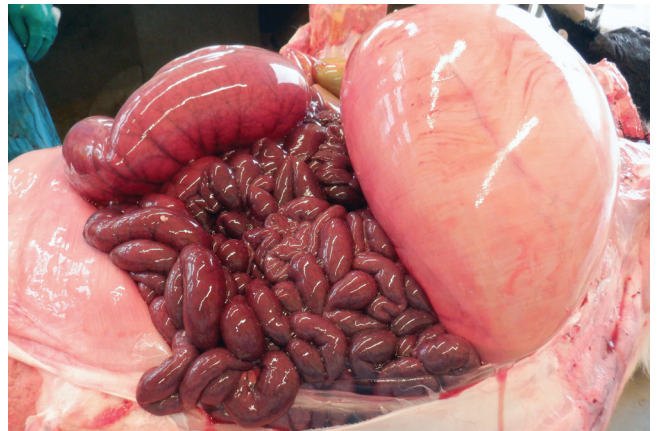


Figure 1: Red coloured intestines in a case of intestinal torsion. Photo: Aideen Kennedy.

A six-week-old Friesian calf was found dead and submitted to Limerick RVL. Upon external examination, the calf was extremely bloated. Opening into the abdominal cavity revealed an intestinal torsion and the intestines were filled with bloody, watery contents. A rumen pH of 5.0 was recorded; a low pH is frequently observed in animals with intestinal torsion. Cases of intestinal torsion may be associated with recent feeding and suggested 'greedy calf' over-feeding may have been the issue in this case.



Figure 2: Intestinal torsion, the intestines are filled with bloody watery contents. Photo: Brian Toland.

Respiratory Tract

Pneumonia

Sligo RVL examined the carcase of a five-month-old calf with a history of weight loss over the previous months. On post-mortem examination, there was consolidation of the right cranioventral lung lobes with areas of necrosis and multifocal, up-to-2cm-sized, abscesses. *Pasteurella multocida* and *Histophilus somni* were detected by polymerase chain reaction (PCR). *Trueperella pyogenes* was cultured from lung tissue. On histopathology, there was diffuse, severe, chronic, bacterial, suppurative bronchopneumonia with multifocal abscessation. Bacterial pneumonia was diagnosed as cause of death; however, initial viral involvement cannot be ruled out. A review of diet was advised.

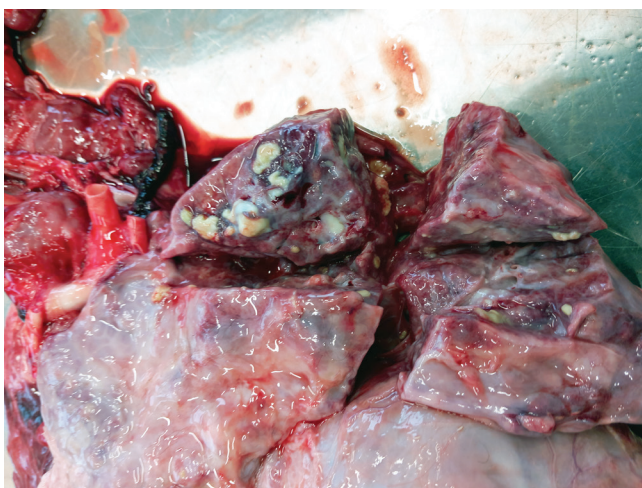


Figure 3: Consolidation and abscessation in the lung of calf. Photo: Rebecca Froehlich-Kelly.

A four-month-old weanling presented to Kilkenny RVL with respiratory signs prior to death. On post-mortem examination, there was a severe bronchopneumonia with bilateral cranioventral consolidation affecting approximately 70 per

cent of the lung parenchyma with multifocal pale, raised nodules within the consolidated tissue. Multiple respiratory bacteria were detected by PCR (*H. somni*, *Mycoplasma bovis*, *Mannheimia haemolytica*, and *P. multocida*). The predominant lesion seen on histopathology was multifocal areas of caseous necrosis which is typically associated with *Mycoplasma bovis* infection and is likely responsible for the gross lesions seen. There was also evidence of extensive fibrosis, suggesting the pneumonia in this animal was long-standing/chronic in nature.



Figure 4: Chronic pneumonia bilateral cranioventral consolidation. Photo: Lisa Buckley.

Parasitic bronchitis

Limerick RVL examined a five-month-old Aberdeen Angus cross heifer calf from a calf-to-beef system with no response to treatment for pneumonia, or anthelmintic treatment. Patent lungworms were visible in the trachea and upper bronchi, there was consolidation of approximately fifteen percent of the lungs with a cranioventral distribution, and there were focally extensive areas of 'ground glass' emphysema with multifocal emphysematous bullae of varied sizes present in the caudal lobes. Ground glass emphysema is suggestive of viruses (none were detected) or lungworm, and bullae are air-filled spaces greater than 1cm in diameter within the lung which have developed because of emphysematous destruction of the lung parenchyma. *M. haemolytica* and *P. multocida* were detected on PCR testing. Primary cause of death was lungworm with secondary bacterial involvement.

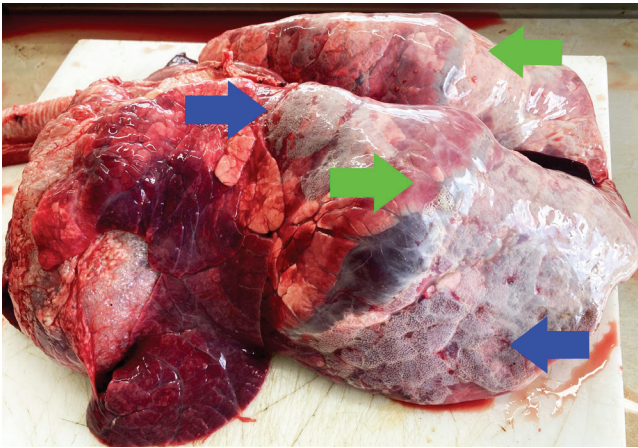


Figure 5: Lungs displaying signs of emphysema, both 'ground glass' (blue arrows) emphysema and large bullae (green arrows). Photo: Brian Toland.

A three-month-old weanling presented to Kilkenny RVL with respiratory signs prior to death. On post-mortem examination, there were large numbers of lungworm in the trachea and distal airways. A broncho-interstitial pneumonia is associated with lungworm infection and lesions seen differ, depending on if infection is in the prepatent, patent, or recovery period. During the patent period gross changes seen can include overinflation of the caudal lobes, patchy lobular atelectasis, and emphysema in severe cases. Histological lesions seen in this case were eosinophilic bronchiolitis and eosinophilic granulomatous alveolitis. Adult worms were visible.



Figure 6: Lungworm in the proximal trachea. Photo: Lisa Buckley.

A five-month-old weanling with respiratory symptoms was submitted to Kilkenny RVL. There was an interstitial pneumonia with multifocal ground glass emphysema and bullae. There was lungworm visible in the airways. Examination of cohorts and a review of lungworm control was advised.

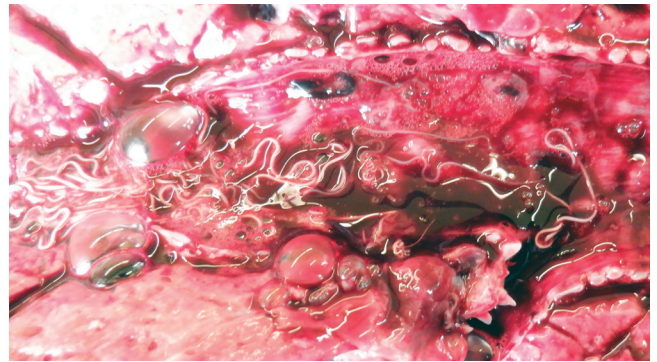


Figure 7: Lung worm visible in the airways. Photo: Aideen Kennedy.

Choke

Athlone RVL examined a three-year-old dairy cow with a history of sudden death. She had milked normally a couple of hours earlier and data from her collar showed nothing significant prior to her death. On necropsy, she had a large, compacted piece of regurgitated cud lodged in her larynx. There was a large blood clot at the tracheal bifurcation with some interlobular oedema. She had very good rumen fill and normal faeces. There were no visible lesions in other organs. Laboratory testing, including histology of the brain, did not show any abnormalities. A diagnosis of suffocation or choke was reached.



Figure 8: A large piece of regurgitated cud occluding the larynx of a dairy cow. Photo: Seamus Fagan.

Urinary/Reproductive Tract Pyelonephritis

Athlone RVL examined a three-year-old cow submitted for necropsy with a history of recurring vaginal prolapse following calving. On necropsy, voluminous ascites was disclosed with copious abdominal and thoracic effusion. There were necrotic, suppurative, and haemorrhagic changes in an enlarged kidney with myriad adhesions of renal cortex to capsule, with focally-extensive, haemorrhagic renal necrosis. The contralateral kidney had haemorrhage within the capsule. There was marked pulmonary oedema and the ocular urea levels were 68.35mmol/L, ten times higher than reference limits. A diagnosis of pyelonephritis, renal haemorrhage, renal failure/uraemia was applied.



Figure 9: Necrotic, suppurative, and haemorrhagic changes in an enlarged kidney (left) and renal haemorrhage (right). Photo: Aoife Coleman.

Nephritis

A nine-year-old cow died and was submitted to Kilkenny RVL. On necropsy, there was severe, bilateral nephritis. There was severe cystitis, and the bladder contained malodorous purulent material. In addition, there was a mild metritis. *H. somni* and *T. pyogenes* were cultured from multiple organs indicating a bacteraemia. *H. somni* can affect vascular tissue and endothelium of organs, causing inflammation and thrombosis.

Babesiosis

Athlone RVL examined a yearling heifer with a history of sudden death. This was the second from the group to have died in the preceding two days. The animal was in good condition and preservation. On necropsy, there was marked splenic enlargement and turgidity, and bilateral darkened kidney cortices. There was an icteric appearance to the soft tissue of the carcass and the urine in bladder was dark red to black. Ocular urea was elevated, and a PCR positive result was identified from the spleen for *Babesia divergens*, the species of protozoan that causes 'red water' due to lysis of erythrocytes and haematuria. A diagnosis of bovine babesiosis was applied. Control of babesiosis requires the consideration of the vectors, environments, immune status of animals, and concurrent comorbidities such as Tick-Borne Fever, caused by *Anaplasma phagocytophilum* and transmitted by same vector tick, *Ixodes ricinus*.

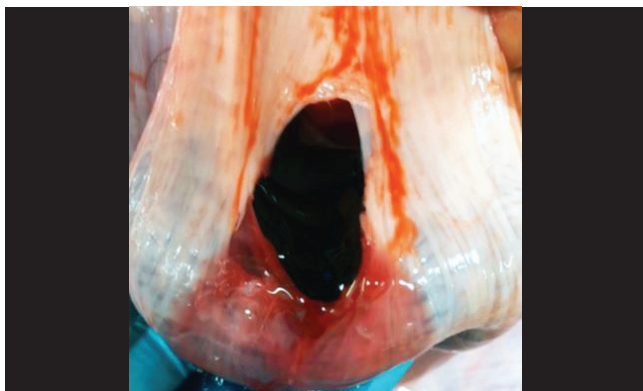


Figure 10: Dark red-to-black urine in the bladder. Photo: Aoife Coleman.

Cardiovascular System

Atrial septal defect

Athlone examined a three-day-old male calf with a history of respiratory clinical signs since birth; the calf had been recumbent, with a poor appetite and lethargic. There was no response to treatment and the calf died. On post-mortem examination, the heart was rounded and enlarged and there was a large atrial septal defect. A diagnosis of an atrial septal defect was made.

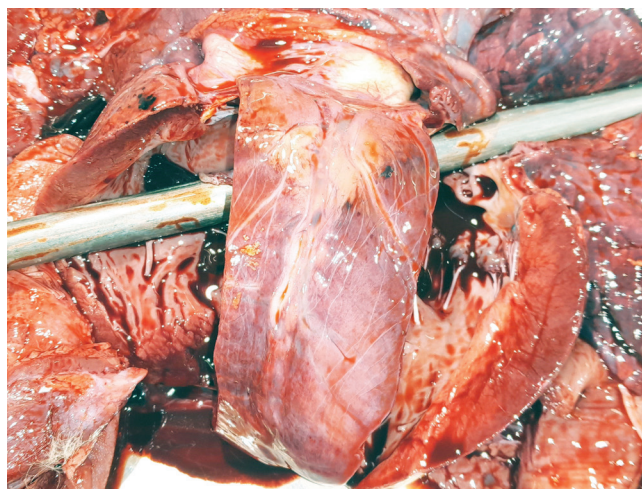


Figure 11: A honing steel passed through an atrial septal defect. Photo: Denise Murphy.

Vena caval thrombosis

An eight-year-old cow presented to Kilkenny RVL with a history of sudden death. There was a large abscess in the caudal vena cava entering the liver. Sequelae to this included pulmonary emboli, multifocal pulmonary abscessation, necrosis, haemorrhage, and chronic, suppurative embolic pneumonia. The most common cause of vena caval thrombosis is ruminal acidosis leading to rumenitis and bacteraemia. Control efforts should focus on diet and reducing the incidence of ruminal acidosis.

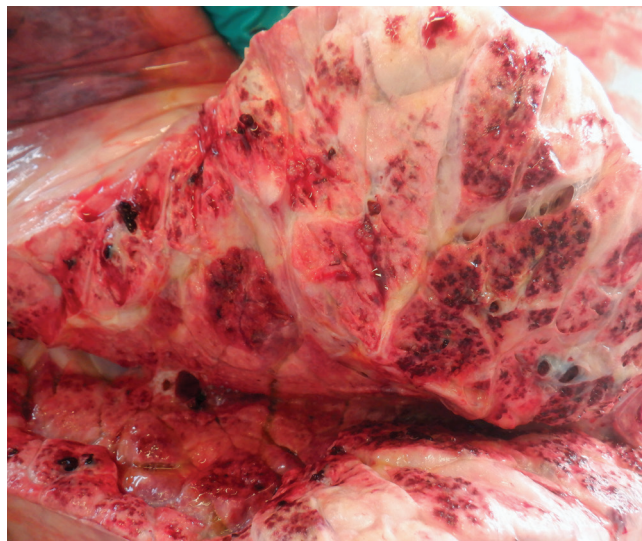


Figure 12: Multifocal areas of pulmonary haemorrhage and necrosis in a cow with vena caval thrombosis. Photo: Lisa Buckley.

Nervous System

Cerebrocortical necrosis

A four-month-old Aberdeen Angus cross heifer calf that presented with neurological signs, with no response to treatment for cerebrocortical necrosis (CCN) was submitted to Limerick RVL for necropsy, a cohort with similar signs responded to treatment. Fluorescence of the brain was demonstrated under Woods Lamp examination; this can be indicative of CCN. Approximately four days after onset, autofluorescence is seen under ultraviolet light. Underlying causes can include: low thiamine diet, lush grass, high concentrate feed, low roughage, high sulphur, lead poisoning, and plants such as bracken through various mechanisms. Rapidly-growing cattle and recently-weaned calves are particularly susceptible when rumen production of thiamine is not adequate.

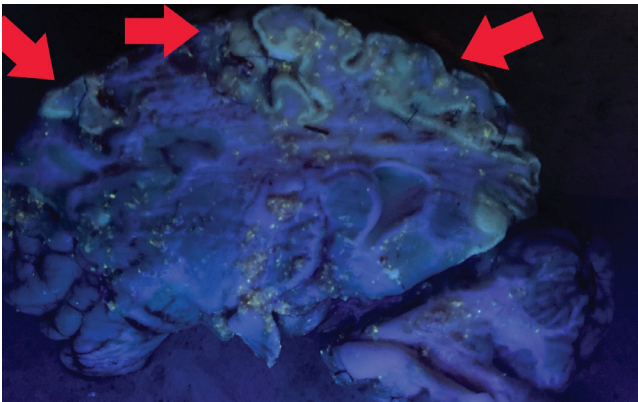


Figure 13: Fluorescence of the superficial grey matter areas (arrows) in a case of cerebrocortical necrosis. The smaller fluorescing spots are likely to be fragments of bone, from opening the skull. Photo: Brian Toland.

Musculoskeletal

Blackleg

Athlone RVL examined two calves with a history of sudden death. On gross post-mortem examination, there was a severe, diffuse, fibrino-haemorrhagic pericarditis in both calves. There were gassy, haemorrhagic myositis lesions in the diaphragm muscles and in the muscles of the right hindquarter of one, and similar lesions in the left shoulder muscles extending down the muscles of the front limb of the other calf. The spleens were enlarged and there was pulmonary congestion. *Clostridium chauvoei* was detected by fluorescent antibody technique (FAT) in both the skeletal muscle and heart lesions of both calves. A diagnosis of blackleg was made and advice regarding the vaccination of comrades with a multivalent clostridial vaccine was given.



Figure 14: Haemorrhagic myositis lesions in the diaphragm muscles from which *Clostridium chauvoei* was detected by fluorescent antibody technique. Photo: Denise Murphy.

Poisonings

Copper poisoning

Limerick RVL examined a five-month-old calf that was "off form" and showed no response to treatment. Necropsy revealed generalised yellow discolouration of mucous membranes, subcutaneous tissue, internal organs, and the brain. Urine had a dark red/black colour. Liver copper concentrations were 6.0mmol/kg; levels greater than 4mmol/kg are suggestive of copper toxicity. A diagnosis of copper poisoning was made.

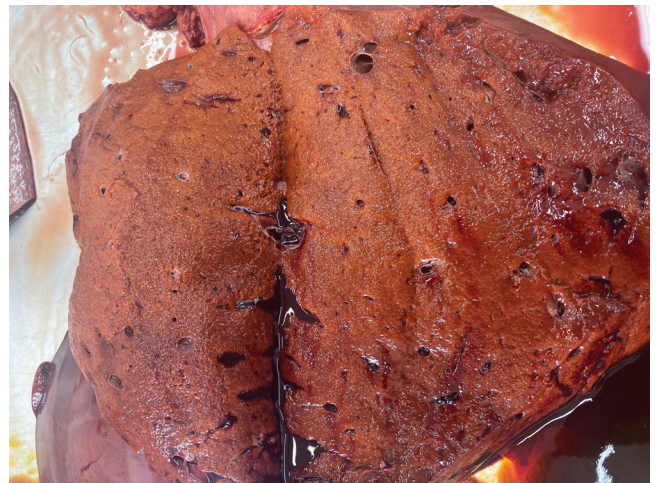


Figure 15: Jaundice of the liver in a case of copper poisoning. Photo: Brian Toland.

Miscellaneous

Athlone RVL examined a four-month-old calf with a history of poor thrive and swollen lymph nodes. On necropsy, there was multifocal marked enlargement of lymph nodes, with the inguinal, mesenteric, and mediastinal lymph nodes being particularly prominent. The thymus was enlarged and nodular in appearance. There were multifocal, pale, circular, 5mm foci in the liver parenchyma. The PCR test for enzootic bovine leukosis (EBL) returned a negative result. On histopathology, various tissues, including liver and lymph nodes, disclosed an unencapsulated, well-demarcated, densely-cellular

neoplasm composed of homogenous sheets of round cells in a moderate collagenous stroma. Juvenile sporadic bovine leukosis was diagnosed.



Figure 16: Multifocal marked enlargement of mesenteric lymph nodes in a case of sporadic bovine leukosis. Photo: Aoife Coleman.

Bovine Lymphomas

Lymphomas are categorized by frequency of occurrence, age at onset, organ system involved, and etiologic agent; they are broadly classified into enzootic and sporadic forms.

Sporadic Bovine Leukosis (SBL):

Non-BLV-associated lymphoma; most often T-cell lymphoma; younger cattle (one to three years of age).

Three forms are usually seen:

- Juvenile Multicentric Form/Calf Form – generalised marked lymphadenomegaly +/- leukaemia +/- other organ involvement that develops within first six months of life.
- Cutaneous/Skin Form – cutaneous lesions seen most often in two-to-three-year-old cattle.
- Thymic Form – cattle usually <2 years of age.

Sheep

Parasitic gastroenteritis and bacteraemia/septicaemia were the most common diagnoses at necropsy in sheep in the RVLs during July 2025.

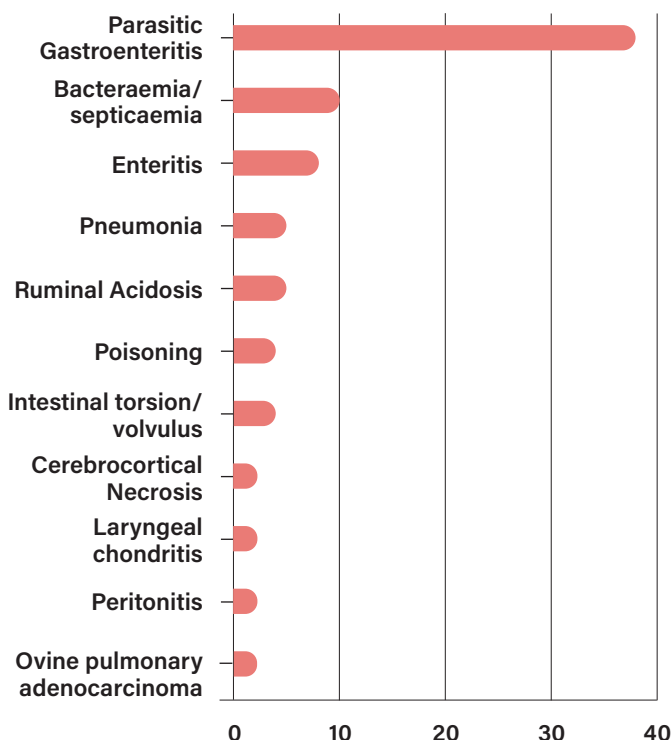


Table 2: The most common diagnoses in sheep submitted for necropsy in July 2025.

Gastrointestinal Tract

Dosing gun injury

Athlone RVL examined two four-month-old lambs with a history of pining. They had received a drench for cobalt the preceding week. Necropsy disclosed severe drenching gun injuries to the oral cavity in both lambs, with fistulous necro-suppurative tract formation. In one lamb, a fracture to a bone of the hyoid apparatus was identified. The pharyngeal area was markedly swollen with the fistulous tract extending down to the subcutaneous tissue on the ventral jaw. The second lamb had a puncture wound evident within the body of the tongue which had become infected and inflamed, with numerous blood clots present in the oral cavity, trachea, and bronchial tree due to ongoing haemorrhage. Injuries in both sheep and cattle, particularly of the mouth, trachea, and oesophagus, can be seen following drenching or bolus administration if incorrect techniques or inappropriately-sized implements are used, or if careful restraint is not utilised. Along with injuries, mortality in these cases is recognised as a frequent consequence to improper application/techniques. Cellulitis, abscessation, aspiration pneumonia, and haemorrhage are associated with these injuries.

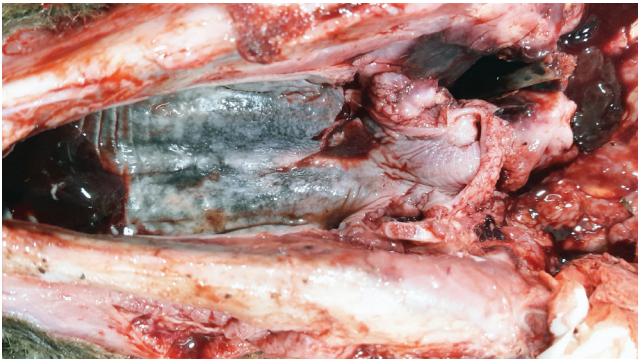


Figure 17: Punctured pharynx in a lamb, considered likely due to a dosing gun. Photo: Aoife Coleman.

Haemonchosis

Athlone RVL continued to see cases of *Haemonchus contortus*/haemonchosis in sheep. One such case was a three-year-old ewe with a history of sudden death. On gross post-mortem examination, there was subcutaneous oedema of the ventral chin. The carcass was very pale; conjunctivae were white, and there was a pale liver, kidneys and lungs. There was brown fluid in the abomasum and large numbers of thread-like worms visible to the naked eye. There was scant dark/black intestinal contents, and the faeces were firm. The worms in the abomasal contents were identified as *H. contortus* and a severe burden was detected in abomasal contents. A faecal egg count of 23,000EPG was found in faeces. *H. contortus* are prolific egg layers. A diagnosis of haemonchosis caused by *H. contortus* was made.



Figure 18: *Haemonchus contortus* worms on the abomasal mucosa showing the characteristic 'barber's pole' appearance. Photo: Aideen Kennedy.

A two-year-old ewe was found dead and submitted to Kilkenny RVL. There had been eight losses in the group. On necropsy, the carcass was very pale. There were large numbers of *H. contortus* parasites in the abomasum. The intestinal content was liquid. There were almost 6,000 strongyle eggs per gram. An examination of cohorts for signs of anaemia and a review of parasite control was recommended.

Respiratory Tract

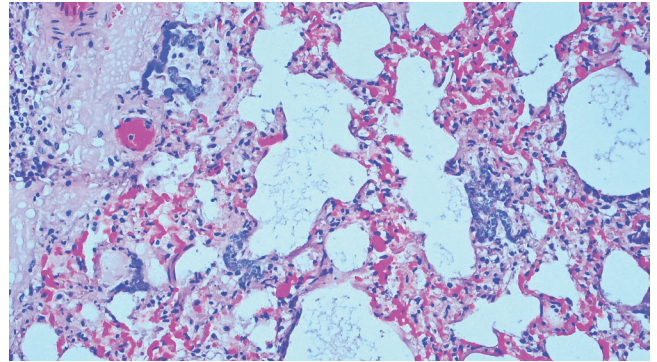


Figure 19: Pasteurellosis in a lamb with bacterial colonies seen in the lungs, with a diffuse interstitial pneumonia. Photo: Maresa Sheehan.

Pneumonia/septicaemia

Two four-month-old lambs were submitted for necropsy to Kilkenny RVL. They were found dead without any previously observed clinical signs. Both had gross evidence of pneumonia; lungs were congested and heavy, with adhesions to the ribcage. Both lambs had dirty perineal areas. *Bibersteinia trehalosi* (one of the causative agents of pasteurellosis in lambs) was isolated from the lungs and liver of both lambs. 1,500 strongyle EPG were detected in one lamb. The histopathology of the liver showed large colonies of bacteria and a thrombus in a blood vessel; lung tissue disclosed myriad bacterial colonies and associated interstitial pneumonia. Thrombosis and an interstitial pneumonia are evidence of a bacteraemia and an associated compromised vascular system, and a systemic inflammatory response as demonstrated in the lungs and liver here. A diagnosis of systemic pasteurellosis was made. Co-infections, e.g., parasitism, can promote the colonisation of *B. trehalosi*.

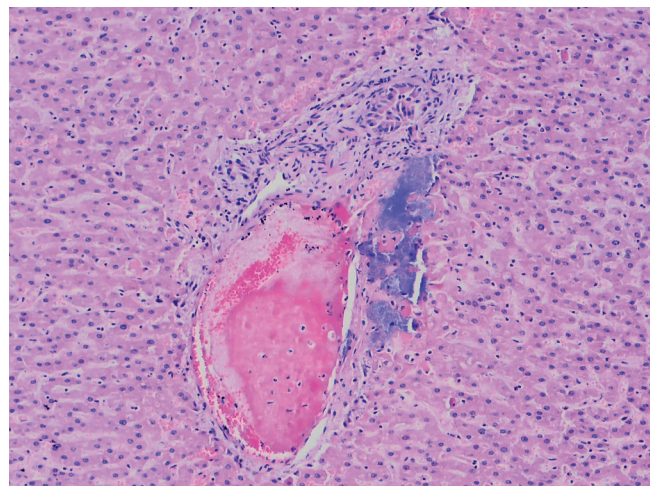


Figure 20: Pasteurellosis in a lamb, the liver showed large colonies of bacteria and a thrombus in a blood vessel. Photo: Maresa Sheehan.

Cardiovascular System

Vegetative endocarditis

A three-year-old ewe which had been found dead without prior symptoms was submitted to Sligo RVL. At post-mortem examination, there was severe ascites, pulmonary oedema, and pleuritis. The lung presented with multifocal

abscessation. There was severe vegetative endocarditis. *Salmonella* sp. was cultured from the carcass. The severe heart pathology was most likely chronic and the main contributor as cause of death. The isolation of *Salmonella* sp. was, however, deemed important and may indicate a flock issue.

Musculo-skeletal

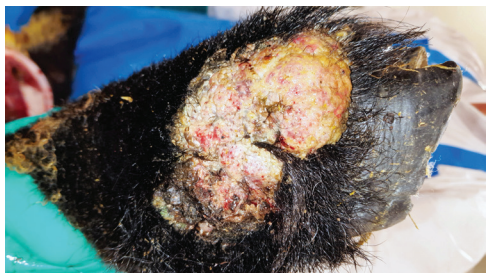


Figure 21: A case of Orf in a lamb from which *Treponema* sp. was also identified. Photo: Denise Murphy.

Orf

Athlone RVL examined an eight-month-old Suffolk ram lamb with growths on his distal limbs but no lameness. The body condition was very good, weight 75kg. There were proliferative growths on three of four distal limbs just at and above the coronary band: some crusted, some suppurative, and some haemorrhagic. Lesions were most severe on the right and left forelimbs with lesions almost encircling the distal limb. There was a proliferative skin lesion on the left knee also. The left hindlimb and remainder of the skin and face were unaffected. A PCR test for Parapox virus, the causative agent of Orf (also known as contagious ecthyma or contagious pustular dermatitis), was positive. Histopathology of various skin lesions found a chronic/active, severe, diffuse, necrotising and proliferative, suppurative dermatitis with ballooning degeneration. The skin lesions were consistent with contagious ecthyma/Orf, and were long-standing, severe, and secondarily infected. A Warthin-Starry stain of the lesions found filamentous positive staining organisms in surface exudate consistent with spirochaetes, e.g., *Treponema*. *Treponema* bacteria are implicated in contagious ovine digital dermatitis (CODD), a severe and painful foot disease, characterised by lameness and hoof separation. The significance of their detection in these long-standing lesions was uncertain.



Figure 22: Proliferative growths on the distal limb just above the coronary band. Photo: Denise Murphy.

Poisonings

Copper toxicity

A four-year-old ewe was found dead and submitted to Kilkenny. This had been the second loss in a flock of 70. On gross post-mortem examination, the carcass, including the liver, was jaundiced. The kidneys were gunmetal black

in colour. The urine was a port wine, almost black, colour. Elevated liver and kidney copper results confirmed copper toxicity as the cause of death.



Figure 23: Jaundiced mucous membranes in a case of copper poisoning in a ewe. Photo: Aideen Kennedy.

There were some ovine cases of copper poisoning submitted to Sligo RVL. In one case, there was acute copper poisoning in an eight-month-old ram which had been noticed dull and with pain, haematuria, and jaundice. The animal had to be euthanised. On post-mortem examination, there was jaundice with a severely yellow discoloured liver. There was haematuria. High copper levels were detected in liver and kidney tissue.

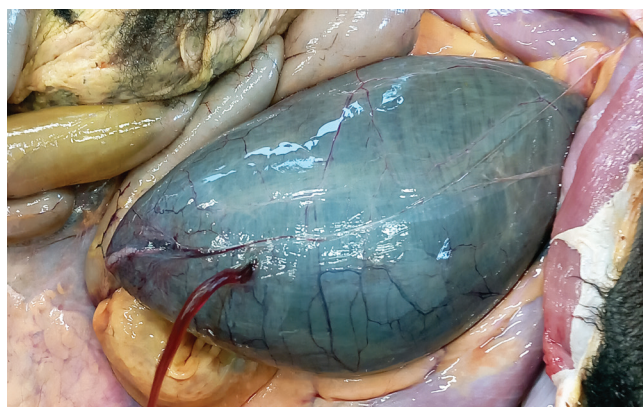


Figure 24: Haematuria in a case of copper poisoning in a ram. Photo: Rebecca Froehlich-Kelly.

In another case, a four-month-old lamb had presented with a history of respiratory symptoms. On post-mortem examination, there was mild jaundice and very dark kidneys (Figure 25). Copper levels in kidney were high, close to the toxic range. Chronic copper poisoning was considered likely.



Figure 25: Dark kidneys in a case of copper poisoning in a lamb. Photo: Rebecca Froehlich-Kelly.