SRUC Veterinary Services Monthly Report for August 2025

OVERVIEW

- **Osteoporosis due to calcium and phosphorus deficiency in weaned dairy cross calves**
- **Haemonchosis causing deaths in ewes and lambs**
- **Necrotic enteritis in juvenile turkeys**

GENERAL INTRODUCTION

August continued the run of warmer than average months with a mean temperature of 14.6˚ - 1.3˚ above the thirty year average. Rainfall in the west was as expected but conditions in the east were dry giving a total overall rainfall 83 per cent below average. Sunshine hours equated to 114 per cent of average.

DISEASE ALERTS

The following conditions were reported by SRUC VS disease surveillance centres in November 2024. Given similar climatic and production conditions, they could also be important this year.

Systemic pasteurellosis due to *Bibersteina trehalosi*

A seasonal peak in the diagnosis of systemic pasteurellosis due to *Bibersteinia trehalosi* is often recorded in November. A typical history would be of several deaths over a short period of time with clinical signs only observed in a minority of cases. Petechial haemorrhages, lymphadenopathy and oesophageal ulceration are common postmortem examination findings. Lungs may be purple but show no evidence of consolidation. Multiple pin point pale spots on the liver can sometimes be seen. Affected lambs are frequently diagnosed with concurrent parasitic gastroenteritis and/or trace element deficiency particularly cobalt and selenium.

DISEASE ALERTS

Laryngeal chondritis

Laryngeal chondritis is characterised by respiratory stridor with associated hyperpnoea and dyspnoea. Death occurs when severe laryngeal stenosis leads to fatal hypoxia. The condition is diagnosed most frequently in younger rams which may be at risk during tupping. It is thought that mucosal damage predisposes to infection with opportunistic bacteria leading to oedema, ulceration and necrosis of the mucosa, plus inflammation and necrosis of the cartilage. A range of bacteria including *Trueperella pyogenes, Streptococcus* spp, *Fusobacterium* spp and *Bacteroides* spp can be isolated from the lesions. The resulting narrowing of the rima glottidis gives rise to the characteristic laryngeal stridor. Progression to abscessation with the formation of discharging sinuses may explain poor treatment success and the need for a guarded prognosis.

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CATTLE

Nutritional and metabolic disorders

Two simmental cross dairy calves aged three and four months were euthanased to investigate issues with suspected pneumonia and recumbency in a group of 60 calves. They had been weaned three-weeks before and moved from small pens to a single large pen with access to a grass paddock. Around ten per cent of the calves were noted to be lame or recumbent seven to ten days later and antibiotic treatment was ineffective. Postmortem examination identified displaced mid shaft femoral fractures (Fig 1) in both calves and pliable ribs that were easily fractured. There was no evidence of pneumonia in either case. Histopathology confirmed excessive bone resorption and a pathological fracture in a section of rib. Analysis of rib found that calcium levels were slightly low at 35.4 per cent (reference range 36 – 45 per cent) but bone ash results were adequate. The overall findings were consistent with osteoporosis where there is normal bone quality, but an imbalance between bone formation and resorption. Most cases of osteoporosis in animals are nutritional and caused by a specific nutrient deficiency such as calcium or phosphorus. The calves were fed a home mix comprising soya, maize, barley and straw. Youngstock minerals had been included at a low rate until they ran out after which dry cow minerals were substituted for a period of three weeks. Diet analysis showed both rations to be deficient in calcium and phosphorus with only 40 per cent of calcium requirements met when dry cow minerals were fed. A final diagnosis of osteoporosis and pathological fractures secondary to calcium, phosphorus and suspected vitamin D deficiency was made. A funded nutritional review was offered.

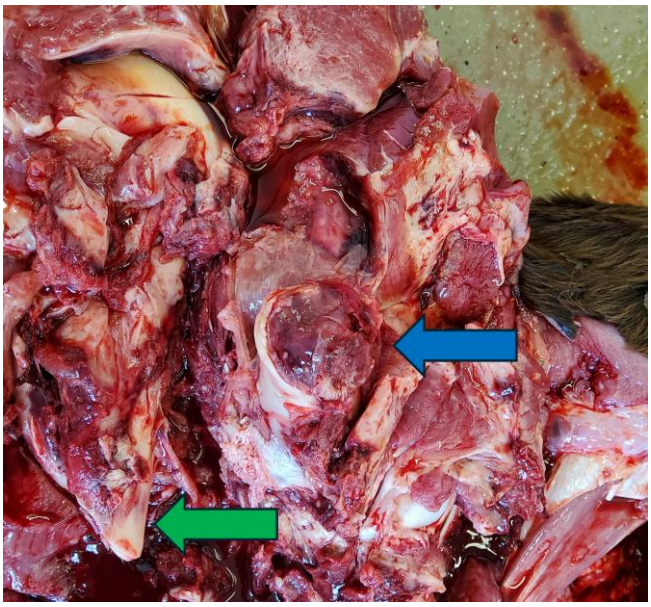

Figure 1 – Femoral fracture due to osteoporosis associated with calcium and phosphorus deficiency in a dairy calf. Arrows indicate the proximal (green) and distal (blue) portions of bone.

Toxic conditions

A group of eight, in calf Holstein heifers were turned onto rented land with a ditch as the only source of water. Two weeks later a 20-month-old animal was observed to convulse and die over a 30-minute period. The owner had seen hemlock plants (*Oenanthe crocata*) and was concerned that poisoning was the cause of death. Pieces of white root were found within the rumen and reticulum (Fig 2) confirming the diagnosis. It was advised that either the ditch was fenced off and an alternative water source supplied, or the heifers were moved to a different area. A spell of dry weather preceded the death and falling water levels in the ditch will have allowed easier access to the roots.

Figure 2 – Root fragments recovered from the rumen of a dairy heifer in a case of hemlock water dropwort poisoning.

Parasitic diseases

A number of Jersey cows that had been purchased in October 2024 developed respiratory signs in early July while homebred cows in the same group of 140 were unaffected. Lungworm was diagnosed and they were treated with eprinomectin. The sixth cow to develop severe dyspnoea in the 26 day period since the pour on was applied was euthanased for postmortem examination, the previous five having died. Live *Dictyocaulus viviparus* were found throughout the airways and Baermann examination confirmed that the infection was patent. The cranial and middle lung lobes were consolidated and *Klebsiella pneumoniae* was isolated from affected tissue. The findings confirmed treatment failure, and a decision was made to house the affected cows and re-treat with eprinomectin ensuring that they were not underdosed. There were no further deaths and only a single *D viviparus* larvae was identified in faecal samples collected three weeks post-treatment.

Reproductive tract conditions

Two stillborn simmental cross calves were submitted for postmortem examination having been delivered by caesarean section on the same day. Both dams had been confirmed as 3 to 3.5 months pregnant in October 2024 however they did not calve as expected in spring and were assumed to have aborted. The foetuses were overlarge and weighed 69 and 76.2 kg with crown rump lengths of 111 and 119 cm. The carcases were generally oedematous, the fetlock joints could be hyper-extended and atrial septal defects were noted. Prolonged gestation was suspected as the herd owner was confident that neither cow could have been served accidentally at a later date. Prolonged gestation in cattle is defined as pregnancy lasting beyond 300 days and histopathology identified abnormalities in the pituitary gland, adrenal glands and brain to support this hypothesis. Findings included disorganisation and lack of differentiation of the adrenal medulla and cortex, apparent absence of the pituitary pars intermedia and suspected thinning of the granule cell layer in the cerebellum. The pathology would have caused adreno-hypophyseal hormone insufficiency resulting in prolonged gestation. This condition is thought to have a genetic basis.[1] Both calves had been sired by the same bull which had been used previously without any issues.

Musculo-Skeletal conditions

A five-month-old Highland bull calf was noted to be hypersalivating during a period of hot weather. It presented with an abnormal gait the following day and was treated with antibiotics and NSAIDs. Bulling activity had been observed within the group, and it was assumed to have sustained an injury. However, it was found dead 24 hours later and submitted for postmortem examination. This revealed extensive dry haemorrhagic necrosis of the gluteal, semitendinosus and semimembranosus muscles in the left hind leg with petechiation of the kidney, liver and endocardium also described. Blackleg was

suspected and *Clostridium chauvoei* was detected on fluorescent antibody testing of affected muscle confirming the diagnosis. The holding had a previous history of the condition but did not vaccinate

SMALL RUMINANTS

Parasitic diseases

Multiple diagnoses of haemonchosis were recorded during August in a repeat of 2024. Cases occurred in a number of areas with the north-east proving to be high risk again. Most outbreaks were preceded by a move to pasture previously grazed by other sheep, and worming histories were variable. Clinical presentations ranged from sudden death in adult ewes to poor growth, pallor, and oedema in lambs. Typical postmortem examination findings included pale mucous membranes, subcutaneous and body cavity oedema, plus oedema of the abomasal wall with blood-stained contents. Worm egg counts were high, ranging from 8,650 to 78,900 strongyle eggs per gram (epg), and abomasal worm counts confirmed substantial burdens of *Haemonchus contortus* with up to 50,750 worms recovered. Nematode burdens tended to be mixed with *Teladorsagia* and *Trichostrongylus* spp also present.

Nine carcases were submitted over the course of a ten-day period to investigate ongoing lamb mortality in a group of 150 ewes with two-month-old cross lambs at foot. The group had been set stocked since lambing and the fields had not been grazed by sheep in 2024. The ewes had been treated with moxidectin injection in April, and the lambs had received an ivermectin drench ten days prior to the date of the first submission. At least 12 lambs had already died, and the first five carcases were faecal stained and emaciated weighing between 8.4 and 12.7 kg. The postmortem examination findings were consistent with parasitic gastroenteritis and treatment failure. Strongyle egg counts ranged from 250 to 3150 epg and abomasal worm counts of 3600 to 25,600 were dominated by *Teladorsagia* spp. In contrast, very few worms were recovered from the small intestines. *Listeria ivanovii* was isolated from the liver of one lamb and the kidney of a second. The group failed to improve following administration of monepantel with ongoing daily losses. A further four carcases were submitted seven days post treatment and strongyle egg counts varied from 50 to 9550 epg. Between 10,500 and 39,300 *Teladorsagia* spp were recovered from the abomasa. *Listeria ivanovii* was cultured from the liver of one lamb and multiple dark red, 1 to 2 mm irregular lesions were noted on the liver of another. Histopathology confirmed these to be foci of coagulative necrosis likely due to *Listeria* spp infection although not confirmed by culture in this case. It was suggested that nematode damage was predisposing to the transfer of *Listeria spp* bacteria across the wall of the alimentary tract. Seven of the nine lambs had low liver selenium results and supplementation was advised for the surviving lambs. A faecal worm egg count reduction test was carried out with a reduction of only 28 per cent post treatment with monepantel. Further investigations are ongoing, but resistance to multiple anthelmintic groups seems likely.

Generalised and systemic conditions

A 14-week-old Lleyn lamb was found dead, and postmortem examination identified a pericardial fibrin clot along with flattening of the cerebral gyri and cerebellar coning. The faeces were diarrhoeic, the strongyle egg count was 1000 epg and 28,700 *Teladorsagia* sp worms were recovered from the abomasum. Negligible numbers of worms were present within the small intestine. Histopathology confirmed focal symmetrical encephalomalacia consistent with a diagnosis of clostridial enterotoxaemia type D (pulpy kidney). The history indicated that the lambs had received two doses of a clostridial vaccine with the second given one month before. This suggested that either the lamb had been

missed or had failed to respond to the vaccine. The group was grazing a reseeded pasture, and the high worm count was unexpected. The most likely explanation was the presence of pre-existing worm burdens when the group was moved onto the area. Both cases illustrate the need to monitor worm egg counts even on pastures that are expected to be low risk.

Severe cellulitis, lameness and diarrhoea affecting approximately 50 per cent of 1200 ewes and 2000 lambs was reported during the two weeks after the flock was dipped. Thirty lambs were also found dead across multiple fields during this period and the carcases of six, four-month-old lambs were submitted for postmortem examination. Five of the six examined exhibited severe, predominantly unilateral cellulitis over the thorax and abdomen (Fig 3), with a pocket of pus often near midline corresponding to the vaccination site. A range of bacteria was cultured including *Streptococcus uberis, Trueperella pyogenes, Fusobacterium* sp and *Bacteroides* sp. *Erysipelothrix rhusiopathiae* was cultured from the liver of the sixth lamb and from the lung of a ewe. *Listeria monocytogenes* was isolated from the lung of a second diarrhoeic ewe. The history indicated that the lambs had received a benzimidazole drench and their second clostridial vaccination prior to being dipped along with the ewes. Dipping had taken place over 48-hours without replenishment of the dip solution at the end of day one. Environmental conditions were not ideal, and the dip was thought to have quickly become heavily contaminated with bacteria. It was suspected that the vaccination site acted as a point of entry for infection followed by the development of cellulitis. Whole flock treatments with ampicillin and oxytetracycline were carried out with a good response to treatment overall. Approximately 5 per cent of cases remained chronically lame and were culled.

Figure 3 – Cellulitis in a lamb post vaccination and dipping.

Respiratory tract diseases

A group of 700 Scottish blackface ewes were handled for administration of a trace element bolus and a topical ectoparasiticide. Six were found dead two hours later and three carcases were submitted for investigation. Postmortem examination found a bolus within the proximal trachea of all three sheep (Fig 4). The protective outer cover was disintegrating, and small needles of metal were present throughout the airways. The lung parenchyma appeared wet, and a stable foam was present within the airways. Asphyxia as a result of careless bolus administration was recorded as the cause of death.

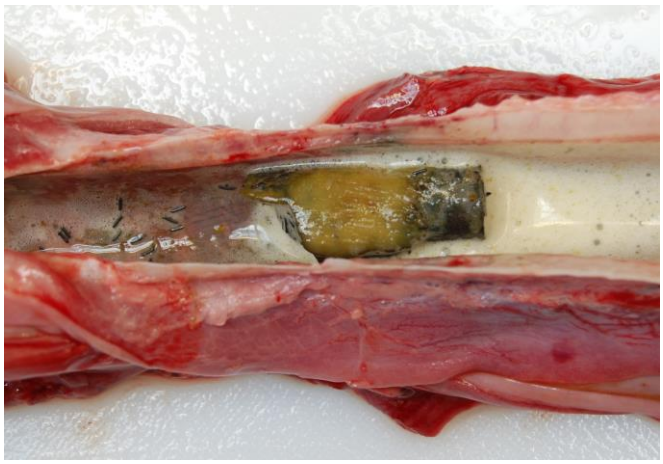

Figure 4 – Inadvertent intra-tracheal administration of a trace element bolus leading to asphyxiation in a ewe.

Nervous system disorders

Cerebrocortical necrosis (CCN) was diagnosed as a cause of neurological signs and death in sheep from all areas of Scotland during August with both ewes and lambs affected. Several of the cases included a history of a move to lush, high-quality pasture 10 to 14 days before problems were reported. Some of the affected animals had received an anthelmintic drench around the same time. Clinical signs included recumbency, opisthotonus, nystagmus and absent menace responses. Fluorescence of the cerebral hemispheres under ultraviolet light was observed in some cases. Neuropathology confirmed laminar cortical necrosis, spongiosis, swollen axons, and perivascular cuffing typical of CCN. It was considered that the aetiology was most likely associated with thiamine deficiency and/or increased ruminal thiaminase activity triggered by sudden dietary change.

BIRDS

Alimentary tract disorders

A seven-week-old bronze turkey was submitted from a flock of 3300 housed in polytunnels in groups of 600. Sixteen birds from one group were found dead over the three days prior to submission. The diet consisted of a commercial cereal mix, and a new batch had been started the previous week. The carcase was faecal stained with marked thickening of the duodenal wall and a thick, white, necrotic exudate on the mucosa (Fig 5). Histopathology revealed a severe multifocal necrotic enteritis extending into the submucosa. Large numbers of gram-positive rods were associated with the pathology, consistent with a diagnosis of necrotic enteritis due to *Clostridium perfringens*. Necrotic enteritis is a common cause of enteritis in turkeys and most frequently affects birds in the four-to-seven-week age group. *Clostridium perfringens* is ubiquitous in the environment and is part of normal enteric flora. Disease is often associated with a predisposing cause such as coccidiosis or intestinal dysbiosis. The latter can be triggered by dietary change or a high cereal diet which may have played a role in this case. A very high coccidial count was detected (360,300 oocysts per gram) however there were no lesions on histopathology to support their involvement. Probiotics, gradual dietary change and managing coccidiosis can reduce the risk of disease. Outbreaks are usually short-lived and self-limiting.

Figure 5 – Necrotic enteritis in a juvenile bronze turkey

References:

1 Buczinski S, Belanger AM, Fecteau G, Roy JP. Prolonged gestation in two Holstein cows: Transabdominal ultrasonographic findings in late pregnancy and pathologic findings in the foetuses. *J Vet Med A* 2007; 54(10): 624-6