SRUC Veterinary Services Monthly Report for June 2025

OVERVIEW

- **Lead poisoning in cattle at grass**
- **Abortion storm in dairy heifers due to *Salmonella enterica* serotype Dublin**
- **Further cases of lymph node aplasia in Scottish blackface lambs**
- **Salt poisoning in weaned pigs**

DISEASE ALERTS

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

Copper deficiency in suckled calves

Copper deficiency can be primary or secondary due to iron, sulphur or molybdenum antagonism in the rumen. Clinical signs can include poor growth rates, depigmentation of the hair and diarrhoea. Anaemia and lameness can also be seen. Copper is well absorbed from milk, however if the cows are also deficient, milk copper content will be reduced. In the absence of supplementation dam fertility is likely to be impacted.

***Erysipelas rhusiopathiae* arthritis in pigs**

This is the chronic form of erysipelas and is most common in growing and fattening pigs. Affected animals may be recumbent or non-weight bearing on an individual limb. The bacteria is carried, and shed from, the tonsils of healthy carrier pigs. Treatment of cases is usually ineffective and vaccination can be used to reduce the level of infection in the herd.

GENERAL INTRODUCTION

The mean temperature in June was 1°C higher than the 1991 – 2020 average making it the 11th warmest on record. It was generally sunny and dry in the east with duller, wetter conditions in the west. Orkney was an exception to this recording its wettest June on record with twice the average rainfall. For Scotland as a whole rainfall was 121 per cent of average and sunshine 96 per cent.

CATTLE

Toxic conditions

Two cases of lead poisoning affecting beef cattle at grass were diagnosed in the north-east and are being investigated by Food Standards Scotland (FSS) in order to protect the food chain. The first involved a group of 20 yearling simmental cross cattle on a large suckler unit. A small number of animals were reluctant to move, salivating, and thought to be blind. The third animal to die was submitted for postmortem examination which revealed numerous 1 to 5 mm irregularly shaped fragments of metallic lead within the rumen content (Fig 1). Kidney lead was 59.3 mg/kg fresh tissue (FT) (reference range <2mg/kg FT) confirming a diagnosis of lead poisoning. The source could not be identified however a caravan had been burned in the field and the cattle also had access to a disused quarry. Preventing access to both sites was advised. The second case affected a group of 16, yearling Aberdeen Angus cattle grazing a field where lead batteries had previously been buried. One animal was found dead and a second exhibited bruxism. A kidney lead result of 33.0 mg/kg FT was consistent with poisoning.

Part-funded by the Scottish Government as part of its Public Good Veterinary Advice Services

Figure 1 - Numerous 1 to 5 mm irregularly shaped fragments of metallic lead in the rumen leading to lead poisoning

Generalised and systemic conditions

A dairy herd reported that seven Holstein heifers from a group of 58 grazing rough ground had aborted. A 22- month-old heifer was found dead and submitted for postmortem examination along with a foetus from a different heifer that had been aborted at seven months gestation. The heifer showed evidence of septicaemia/toxaemia with pleural and abdominal serous effusions and an enlarged, mottled liver. *Salmonella enterica* serotype Dublin was isolated from multiple tissues and the foetal stomach contents. According to the history the milking herd was Salmonella vaccinated but heifers are not vaccinated prior to their first calving. A total of 25 heifers aborted which was considered unusually severe. The ground had been grazed in previous years without any issues however there was a concern about ticks and deltamethrin had been applied one week earlier. PCR testing of spleen from the heifer was positive for *Anaplasma phagocytophilum* confirming exposure to tick borne fever (TBF). As these animals were in their first grazing season it was postulated that concurrent immunosuppression due to TBF had exacerbated the losses.

Respiratory tract diseases

A 250-cow suckler herd reported an annual problem with laryngeal chondritis in calves from two-to-three weeks of age. Six calves were affected in 2025 and three, six-to-eight-week-old Limousin cross calves were submitted for investigation. They had received antibiotics for four-to-six weeks which failed to resolve the issue. All calves had necrotic lesions affecting the laryngeal cartilage (Fig 2) with additional anteroventral lung consolidation in two. *Trueperella pyogenes* was isolated from all three. *Fusobacterium necrophorum* was cultured only from calf two, however histopathology findings of abundant filamentous gram-negative bacteria associated with the lesions suggested that it was involved in all cases. There was no evidence that either idiopathic necrotic enteritis or *Histophilus somni* were contributing to the pathology. Liver selenium results were low in both calves tested (0.63 mg/kg dry matter (DM) and 0.44 mg/kg DM; reference range 0.9 – 1.75 mg/kg DM), and further investigation of selenium status was advised in case this was a predisposing factor. Mucosal trauma due to tachypnoea, excoriation by plant material or drenching/stomach tubing injury were all proposed as possible underlying causes. No evidence of primary viral infection was detected however sacrifice of an acute case was suggested as the next useful step in investigating the problem.

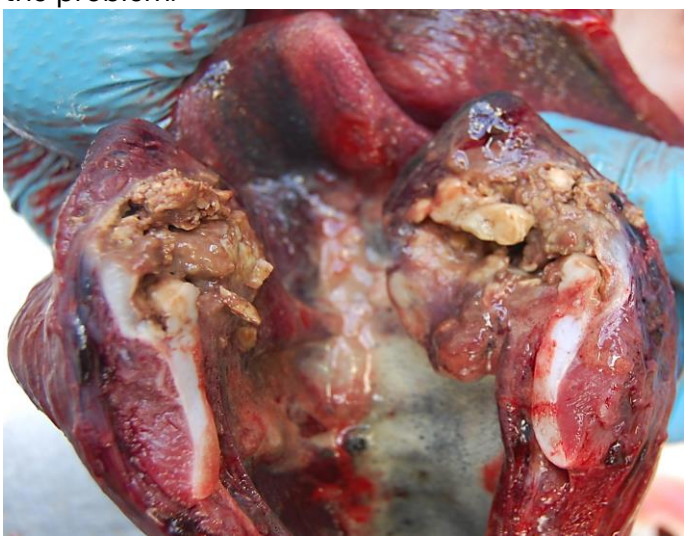

Figure 2 – Necrotic laryngitis in a two-month-old suckled calf

Reproductive tract conditions
A full-term stillborn Shetland cross calf was submitted following three similar losses in an organic herd. The calf weighed 32 kg and was meconium stained with intact slippers, no blood clot in the umbilical artery, unexpanded lungs and a congested brain. Additional findings included subcutaneous oedema and haemorrhage of the rostral muzzle and ingestion of meconium. The thyroid to bodyweight ratio was slightly elevated at 0.05 (reference range ≤0.03) however thyroid iodine content was adequate and there was no evidence on histopathology of an earlier deficiency. The pathology was consistent with death during prolonged second stage labour and histopathology confirmed signs of hypoxia and meconium aspiration. Dystocia/slow calving can be a result of dam over condition, relative foetal oversize or subclinical hypocalcaemia.

Musculo-Skeletal conditions
A 14-month-old Aberdeen Angus bullock from a herd of 20 cows was presented due to difficulty swallowing and swelling at the angle of the jaw. It was euthanased and submitted for postmortem examination which revealed multiple 3 to 10 cm diameter, well demarcated, round to oval, solid masses caudal to the larynx in the soft tissues of the neck (Fig 3). Further masses were found within the connective tissues of the ventral neck, on the parietal pleura, rumen serosa and in the liver parenchyma. Histopathology confirmed neoplasia and a rhabdomyosarcoma was considered the most likely diagnosis. In accordance with the Enzootic Bovine Leukosis (EBL) (Scotland) Regulations 2000 a section of tumour was PCR tested for EBL with negative results.

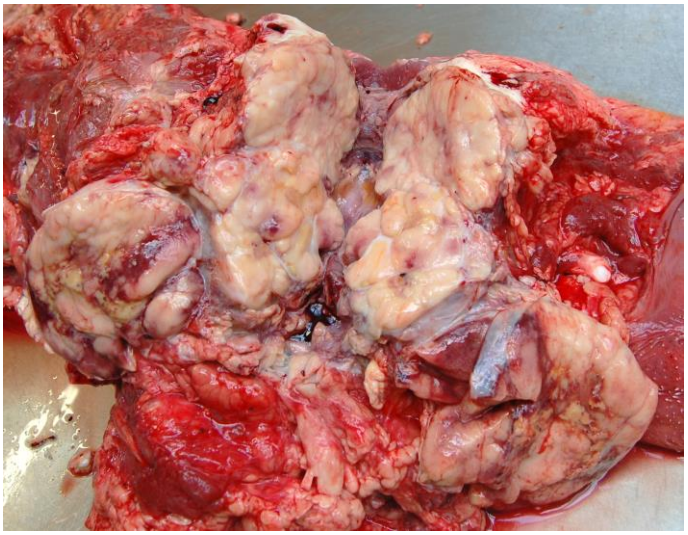

Figure 3 – Suspected rhabdomyosarcoma tumour masses in the neck of a 14-month-old bullock

SMALL RUMINANTS

Respiratory tract diseases
A flock reported the death of nine lambs from a group of 149 with the first losses occurring soon after handling three days before when a spot on product, an anthelmintic drench, a mineral drench and a clostridial vaccination had been administered. There had been no deaths in a group of 120 single lambs treated similarly ten days before. The carcases of three, four-to-six-week-old Scottish blackface lambs and one Cheviot lamb of the same age were submitted to investigate the problem. The lungs from lambs 1, 3 and 4 showed evidence of oedema and consolidation with froth in the airways. The lungs of lamb 2 were dark red/purple with a firm, lumpy texture particularly in the diaphragmatic lobes and "dirty looking" froth in the airways. Inhalation of the mineral drench was suspected and confirmed on histopathology which revealed neutrophils, oedema and fibrin within the alveoli adjacent to the bronchioles. The bronchi and bronchioles were also filled with neutrophils and cellular debris with variable epithelial attenuation and necrosis of the bronchiolar epithelium. The

presence of grey granular material was consistent with drench. This condition is recorded annually in early summer and significant numbers of lambs can be lost unnecessarily. It highlights the need for care and attention to detail when carrying out multiple management tasks in groups of young lambs.

Nervous system disorders

Two cases of louping ill were diagnosed in Perthshire during June. In the first flock, ten strong Scottish blackface lambs around one month-of-age from a group of 100 developed a tremor and lost condition over the course of a week. There were no significant findings on postmortem examination of the submitted carcase however neuropathology detected moderate gliosis and scattered neuronophagia multifocally in the cerebrum, cerebellum, thalamus, mid-brain and medulla consistent with louping ill virus infection. In the second case, ten of 200 hoggs were found dead on the hill and blood samples were collected from a live, pyrexic hogg showing signs of ataxia. The sheep were reported to be covered in ticks, and in previous years had already been treated. Both cases were PCR positive for *Anaplasma phagocytophilum* and seroconversion to louping ill virus was confirmed with a preponderance of IgM indicating recent infection. Coinfection with *A. phagocytophilum* and louping ill virus is not unusual as they are both transmitted by *Ixodes Ricinus*. Concurrent infection in TBF naïve lambs can result in more severe disease and higher losses.

Circulatory system disorders

Around one third of a group of 40 lambs that had been orf-vaccinated five weeks earlier developed lesions over a 14-day period. A two-month-old Scottish blackface tup lamb was euthanased on farm and submitted for postmortem examination. The carcase was thin with severe orf lesions at the vaccination site and around the muzzle. No lymph nodes were detectable in the carcase (Fig 4), and the spleen was reactive. The farmer was already aware of the issue of lymph node aplasia in Scottish blackface lambs. Three similarly affected lambs were submitted from a second flock with the same diagnosis. The condition has only been seen in Scottish blackface sheep and the gene(s) responsible have yet to be identified.

Figure 4 – Absence of mesenteric lymph nodes in a Scottish blackface lamb with congenital lymph node aplasia

PIGS

Nervous system disorders

Thirteen, seven-week-old large white cross pigs from a group of 350 were found dead with no prior clinical signs. Other affected pigs were described as having a full body tremor and head pressing progressing to death. They had been weaned three weeks earlier. No other groups on the unit were affected and postmortem examination of four carcases was unremarkable. Neuropathology revealed an eosinophilic meningoencephalitis and laminar necrosis in the cerebral cortex, pathognomonic of salt poisoning/water deprivation. Pigs are particularly vulnerable to dehydration, leading to disturbances of sodium ion regulation. Clinical signs of salt poisoning include blindness, head pressing, convulsions and death. The amount of salt in the diets of pigs varies considerably, but toxicity does not occur if plenty of water is available. Signs of poisoning may also occur when

the water supply is replenished after a period of restriction. Further investigation revealed that there was construction work going on next door to the unit and it was possible that the builders had turned the water off for a period without the farmer knowing. No further losses have occurred.

Alimentary tract conditions

A herd submitted the carcase of a five-month-old Hampshire cross fattening pig following the loss of nine animals from a group of 200 in 6 days. Deaths had occurred in several pens with no premonitory signs observed. The only management change was the introduction of a new batch of feed which was noted to be dustier than usual. Postmortem examination found a markedly dilated caecum, spiral colon, and colon containing gas and liquid digesta (Fig 4). There was no evidence of intestinal volvulus or obstruction. Histopathology revealed haemorrhage and thrombosis in one section of the large intestine and changes consistent with endotoxaemia/septicaemia affecting the lungs and liver. The latter were considered secondary to the intestinal dilation. No intestinal pathogens were detected and alteration of intestinal motility associated with the diet change and/or intestinal displacement was suspected as the underlying cause.