

### OVERVIEW

- **Outbreaks of disease associated with poor forage quality in both cattle and sheep**
- **Dairy cow deaths due to acute *Mannheimia haemolytica* pneumonia**
- **Congenital arthrogryposis in Suffolk lambs**
- **Lead poisoning in ducks**

### DISEASE ALERTS

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

#### **Lead poisoning in cattle post turn-out**

Lead poisoning is most commonly diagnosed between May and August with the highest incidence in the period immediately after turn-out. Fields should be inspected before cattle, especially youngstock, are introduced. Lead batteries are a common source of toxicity and may be present as a result of fly tipping or been overlooked following use of an electric fence. Sites of burnt-out vehicles and bonfires can also pose a threat. Lead paint and geochemical lead (present naturally in the soil) are less common causes of toxicity. A heparin blood sample is required for diagnosis in the live animal while kidney is the best tissue to collect after death. A useful guide is available to download from Food Standards Scotland:

[Lead on Farm Leaflet Update 2021 - March 22 2021.pdf](#)

#### **Nematodirois in lambs**

Outbreaks of nematodirois on Scottish holdings peak in June with a higher number of diagnoses following a long, cold spring. The nematodirus forecast is available on the SCOPS (Sustainable Control of Parasites in Sheep) website (<https://www.scops.org.uk/forecasts/nematodirus-forecast/>). Fields grazed by six to twelve-week-old lambs every year are highest risk particularly if nematodirois was confirmed in the previous two years.

### GENERAL INTRODUCTION

The mean temperature for March was 1°C above the thirty-year average but higher than average wind speeds throughout the month created wind chill. The overall rainfall figure of 119 per cent above average was largely due to wet conditions in the north-west. Sunshine hours were 121 per cent of the 1991 to 2020 average.

### CATTLE

#### **Parasitic diseases**

A dairy herd calving all year round and milking approximately 800 Holstein cows submitted eight calves for postmortem examination over the course of a week. This was prompted by a spike in calf mortality with around 30 deaths in the previous month. Diarrhoea with a very poor response to treatment was the main issue reported. Dams were vaccinated at drying off with the aim of boosting colostral antibodies against cryptosporidia, rotavirus, coronavirus and *Escherichia coli* K99. Calves received pasteurised, BRIX tested (>22 per cent) colostrum and paromomycin was administered for the first five days of life. Calves also received an intranasal respiratory vaccine and a coronavirus vaccine at five days of age. Submitted calves ranged in age from 10 days to one month. Cryptosporidial oocysts were detected in the faeces of six plus rotavirus in one. The two oldest calves had evidence of rumenitis and pneumonia. Histopathology confirmed the presence of large numbers of cryptosporidial oocysts in the ileum and large intestine of three calves confirming this to be the primary problem. A review of pre-weaning calf management was undertaken to identify why the outbreak occurred despite cryptosporidia control measures being in place. Points of weakness included staffing levels, colostrum quality, transition milk feeding, milk replacer volumes, grouping of calves, disinfection protocols for calf equipment. The

scale of the outbreak prompted gene sequencing by the Moredun Research Institute which confirmed that the most common *Cryptosporidia parvum* subtype was the cause. The vaccine is based on the gp60 gene sequence from this subtype and there were no nucleotide differences in the isolates from the farm which could have reduced vaccine efficacy.

### Generalised and systemic conditions

Seasonal issues with failure of passive transfer leading to colisepticaemia were recorded in spring calving beef herds from several regions. A herd of 130 cows submitted two, neonatal Charolais cross calves that had died within 48 to 72 hours of birth with no signs of ill health observed. Both were reported to have been suckling well. However, postmortem examination found omphalophlebitis, peritonitis (Fig 1) and septic arthritis in both. Zinc sulphate turbidity (ZST) test results of 4.1 and 0.6 units (target >19 units) demonstrated hypogammaglobulinaemia and *E coli* was isolated in pure growth from multiple tissues. A seven-day-old shorthorn cross calf from a second herd was euthanased after presenting in lateral recumbency with opisthotonus and horizontal nystagmus. It was the fourth calf to die from 12 born with another 18 cows still to calve. In this case the stockman was concerned that they were not suckling well. Postmortem examination identified cloudy meninges and septic arthritis affecting the carpal and elbow joints. There was no evidence of navel ill. The ZST result was low (6.9 units) and a pure growth of *E coli* was isolated from the brain and spleen confirming hypogammaglobulinaemia and secondary colisepticaemia as the cause of death. The liver selenium result of 0.69 mg/kg DM was below the adult reference range (0.9 – 1.75 mg/kg DM) and it was suggested that dam status was checked in case a deficiency was contributing to the problem.



**Figure 1 – Peritonitis in a neonatal suckled calf with omphalophlebitis, hypogammaglobulinaemia and colisepticaemia**

### Respiratory tract diseases

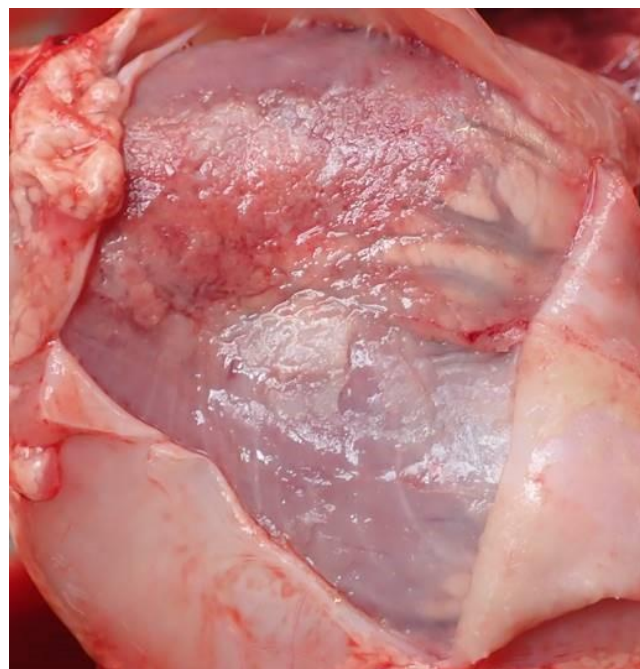
A large, seasonally calving dairy herd reported the loss of eight Holstein cows around one week after uneventful calvings. Clinical signs described included nasal discharge, colic and black diarrhoea with a rapid deterioration prior to death. Four carcasses were submitted with severe fibrinous pleuritis (Fig 2), interlobular oedema/emphysema and lung consolidation present in all cases. Additional findings included endometritis in three and mastitis in two. *Mannheimia haemolytica* was cultured from the lungs of all four with very low cycle threshold (CT) values on PCR testing (11.97, 13.08, 11.6, 14.31) indicating a high pathogen load. Acute *M. haemolytica* outbreaks in adult dairy cattle can be triggered by stress. Overstocking of buildings and some evidence of energy deficiency in late dry/fresh calved cows were identified as possible risk factors.



**Figure 2 – Fibrinous pleuritis due to *Mannheimia haemolytica* in a Holstein cow**

### **Reproductive tract conditions**

Two bovine foetuses were submitted from a beef herd after two of 120 Limousin cross cows aborted one month before they were due to start calving. They had been housed since October on a diet of pit silage. There were no significant findings on examination of the carcasses. *Bacillus licheniformis* and *Aspergillus fumigatus* were isolated from the foetal stomach contents of one and *Listeria monocytogenes* from the other suggesting an issue with forage quality. A second herd submitted the fifth foetus to be born early in a group of 18 cows housed since October. Baled silage had been fed until two to three weeks before, when pit silage had been introduced. Postmortem examination identified pericarditis (Fig 3) and localised thickening of the intercotyledonary placenta. *Bacillus licheniformis* was isolated from the placenta but not the foetal stomach contents. Histopathology described a placentitis with intralesional colonies of bacilli-like bacteria allowing a diagnosis of *B licheniformis* abortion to be recorded. In both cases advice was given on controlling environmental challenge to reduce the abortion risk.



**Figure 3 – Pericarditis in a case of *Bacillus licheniformis* abortion**

### **SMALL RUMINANTS**

#### **Alimentary tract disorders**

A three-year-old pygmy goat was euthanased to investigate ill thrift affecting three animals from a group of 20. Similar cases had been seen in the past and the submitted animal had a two-month history of weight loss. It had not responded to anthelmintic treatments. The carcass was in poor body condition with minimal fat reserves. The mucosa of the distal small intestine and caecum had a yellow tinge raising suspicions of Johnes disease which was confirmed on receipt of a positive antibody ELISA result. Trace element testing of liver identified copper deficiency with the result of 107.625 µmol/kg dry matter (DM) below the suggested marginal band for goats (180–300 µmol/kg DM). Further Johnes and copper screening of the herd was recommended.

#### **Reproductive tract conditions**

A lowland flock of 400 ewes reported an abortion storm confined to a group of 60 homebred gimmers where 17 abortions (28 per

cent) had occurred. The sheep had been housed three weeks earlier and were due to start lambing in a few days. Only tups were purchased and both *Chlamydia abortus* and toxoplasma vaccines were used. A single foetus was submitted and a placentitis was observed. Gram-staining of foetal stomach contents (FSC) detected organisms typical of *Campylobacter* spp and *Campylobacter fetus* was isolated. The owners were reminded of the zoonotic potential and the risk of fomite spread between groups of ewes. There had been no issues in a group of 100 ewes that had already lambed, but it was considered possible that the gimmers had become infected following housing. Carrier ewes can be the source of *Campylobacter fetus* with transfer by wildlife also possible.

### Musculo-Skeletal conditions

A pedigree Suffolk flock lambing 41 ewes starting in mid-December reported issues with limb deformities for the second consecutive year. All ewes were in lamb to the same sire which was one of two tups used the previous year. Large numbers of lambs were affected in 2025, with four of six carcasses submitted for investigation testing PCR positive for schmallenberg virus (SBV). Screening of 104 blood samples collected for maedi visna surveillance confirmed seroconversion to SBV in 40 per cent of the ewes. The shepherd commented that the deformities were less severe this year and mainly involved the distal forelimbs. Affected lambs were often able to suckle but not stand. A total of seven lambs were submitted one of which had died within an hour of birth and five that had been euthanased on farm. The final lamb was submitted live at five days-of-age. It had been born alongside a normal twin and was able to stand with difficulty (Fig 4). It was not possible to fully extend or flex the metacarpophalangeal (MCP) joints which had approximately a thirty-degree range of movement. Arthrogryposis of the MCP

joint was detected in 4 of the other 6 lambs with no further significant findings on postmortem examination. All lambs tested negative for SBV and border disease. Neuropathology identified cerebellar immaturity in five cases. It was not detected in the brain from the live lamb however the cerebellar Purkinje cells continue to develop after birth so any pre-existing immaturity could have resolved. No significant findings were detected on histopathology of muscle, tendon and bone. A single focus of gliosis was detected in the caudal medulla of one lamb but PCR testing for neospora, toxoplasma and sarcocystis proved negative. Congenital arthrogryposis with a genetic basis has been reported previously in Suffolk sheep and this was suggested as a possible explanation.<sup>1,2</sup> Cerebellar immaturity leads to reduced foetal movements in utero which can result in arthrogryposis.



**Figure 4 – Congenital arthrogryposis of the metacarpophalangeal joints in a Suffolk lamb**

### Nervous system disorders

Listerial encephalomyelitis was diagnosed as the cause of death in ewes from multiple flocks across Scotland during April. A mule flock lambing 1400 ewes reported neurological signs in 15 ewes since housing in mid-January. Affected animals were treated for suspected meningitis or cerebrocortical necrosis but went on to die in 48 to 72 hours. The submitted ewe had been found in lateral recumbency and was hyperaesthetic and unable to stand. Lambing was due to commence in three weeks and a BOHB result of 1.8 mmol/l (reference range <1 mmol/l) was considered secondary to recumbency. The group had initially been fed pit silage followed by baled. Lesions diagnostic of listerial encephalomyelitis were detected on histopathology of brain. It was suggested that forage was the most likely source of *Listeria* spp, and that the timescale implicated both the pit and baled silages. Disease risk can be reduced by avoiding silage that is obviously spoiled or from punctured bales. The top layer of the pit and the outer layer of bales are highest risk. Uneaten forage should be cleaned away before adding more and it should be easily accessible to reduce trampling. Silage analyses can be checked for high pH and/or high ash content (>80g/kg DM) indicating poor fermentation and excessive soil contamination.

A three-year-old tup in moderate body condition became inappetent and was found dead the following day. Postmortem examination identified a 3cm diameter hypophyseal abscess which was displacing the pituitary and pressing on the ventral medulla. A pure growth of *Corynebacterium pseudotuberculosis* was cultured from the site, with no further lesions of caseous lymphadenitis detected in the carcass. The venous architecture located adjacent to the pituitary (cavernous sinus) is considered a risk factor for the deposition of septic emboli and subsequent abscess formation. An infarct

was found in one of the kidneys, suggesting a previous episode of bacteraemia.

### BIRDS

#### Toxic conditions

Three ducks from a backyard flock of four ducks and eight chickens became unwell over a period of four days. The first was found moribund and died soon after. Two days later, a second became recumbent with its wings held extended. It was submitted for investigation along with a third duck which could walk but appeared weak. Postmortem examination identified evidence of inappetence and liquid green rectal contents. High kidney lead results of 85.8 and 54 mg/kg fresh tissue (FT) confirmed a diagnosis of lead poisoning. The ducks and chickens shared an outside pen and were let out into the garden once a day for a few hours. Further discussion with the owner revealed that an air rifle had previously been used for target practice in the garden. Fragments from the pellets contaminating the ground were surmised to have been picked up by the ducks and Food Standards Scotland were notified of the incident. The owners were advised not to consume chicken eggs until further screening had taken place. One egg from each bird was tested with all results within background limits.

### References:

**1 Doherty ML, Kelly EP, Healy AM *et al* Congenital arthrogryposis: an inherited limb deformity in pedigree Suffolk lambs. *Vet Rec* 2000; 146: 748-53**

**2 Murphy AM, MacHugh, Park SDE *et al* Linkage mapping of the locus for inherited ovine arthrogryposis (IOA) to sheep Chromosome 5. *Mam Genome* 2007; 18: 43-52**