

SRUC VS Surveillance Activities

Quarterly Report – April to June 2021

SRUC Veterinary Services (VS) carries out a range of disease surveillance activities on behalf of Scottish Government. These include regular communications to veterinary practices on a range of animal health matters and responding to requests for expert advice and support in relation to disease investigations as well as provision of a necropsy and clinical pathology service.

Stakeholder contact and outreach

From 1st April to 30th June 2021 SRUC VS recorded 421 contacts with 75 Scottish vet practices. We received a further 24 calls from national bodies including APHA, Police Scotland, RSPB and SSPCA, a vet school and wildlife park as well as 34 calls from vet practices in the north of Cumbria and Northumberland. Queries related to the main livestock species, native wildlife and camelids. Over ninety percent of recorded contacts were by phone.

Most requests (362 of 479) involved support with disease investigations. Of the 248 bovine disease investigations discussed with practitioners, sudden death, diarrhoea and respiratory disease were the most common topics. For the 171 sheep cases the most frequent clinical presentations by a margin were abortion and sudden death (both 40 contacts) followed by nervous signs (23). A further 38 and 11 contacts concerned healthy cattle and sheep, respectively.

Webinars

SRUC VS offered three nationwide webinars this quarter.

Webinar	Title	Attendees	Watched recording
27 May	Sheep worms unhatched– a brief review and update for busy practitioners	42	112
1 July	Dairy beef systems– challenges and opportunities for vets	27	81
28 July	Leading the fight against lungworm in cattle	36	12 (not on general release)

The outreach webinars have been very successful, and they will continue in future. We are now moving to a blended timetable with the Bitesize (with some external speakers) and Outreach (mostly VIO speakers) webinars being alternated.

Submissions and diagnostic rates

Abortion and PM material are handled by our network of PM centres throughout Scotland, while clinical pathology samples and material arising from carcase examinations by private veterinary surgeons (PVS) are submitted to our veterinary and analytical laboratory near Edinburgh.

2,792 laboratory submissions were received from 106 vet practices in the SRUC VS catchment area – 92 practices based in Scotland and 14 practices in Cumbria and Northumberland, which carry out work on both sides of the border. Further diagnostic samples were submitted from QMS and a vet school as well as law enforcement bodies such as the Police and SSPCA.

Samples were submitted mostly from cattle, small ruminants, birds, pigs, camelids, and native wildlife. 2,114 submissions were for diagnostic (disease investigation) and 678 for monitoring (screening of healthy animals) purposes.

The most common clinical presentations for diagnostic submissions across all main livestock species are shown below. The three most common presenting signs for cattle in this quarter were diarrhoea, wasting and found dead; for sheep it was found dead, abortion and diarrhoea.

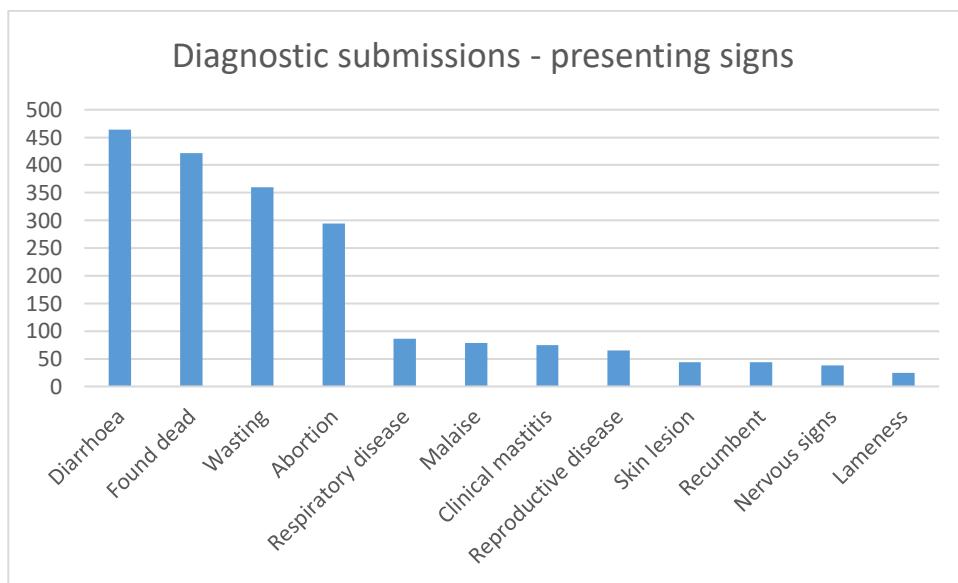


Figure 1: The 12 most common presenting signs of 2,114 diagnostic submissions received from 1st April to 30th June

Submissions by species groups

VS receive mostly submissions from cattle and sheep, yet significant numbers come also from poultry, pigs, camelids and native wildlife. Whilst similar numbers of bovine and ovine carcases were received, far fewer clinical path submissions, e.g. blood and faeces were submitted from small ruminants.

	Birds	Camelids	Cattle	Native wildlife	Pigs	Small ruminants
No. of submissions	38	17	1771	24	36	896

Table 1: Submission count by species groups received in the last quarter.

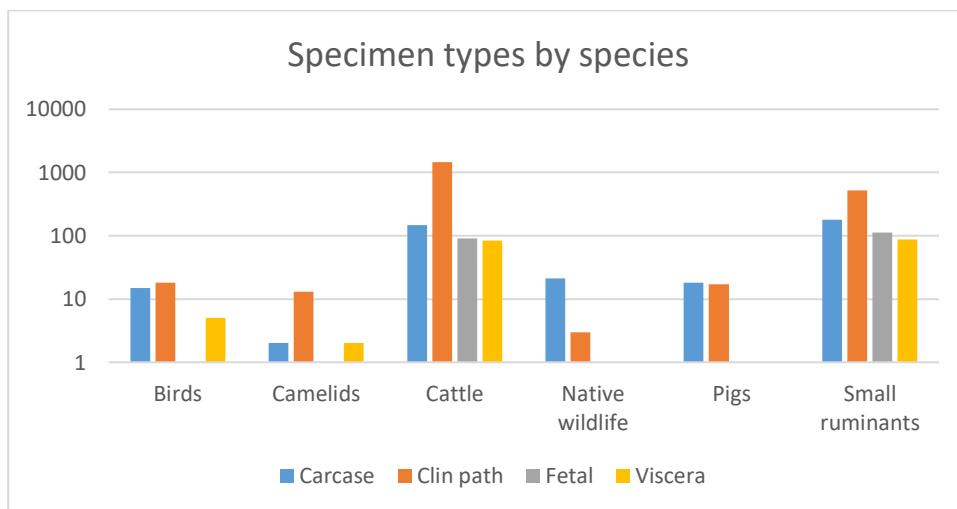


Figure 2: Submissions received in the last quarter by species groups and specimen, please note the logarithmic scale for the submission count.

Diagnostic rates

Diagnostic rates in last quarter are shown below for carcases examined by SRUC VIOs (Carcase); clinical pathology submissions i.e. mainly blood and faeces (Clin path); Abortion investigations by SRUC VIOs (Foetal); Submissions of viscera from post-mortem and abortion examinations by vets in practice (Viscera). Most diagnoses were reached on clin path submission, whilst post-mortem examination offered the highest chance to reach a diagnosis.

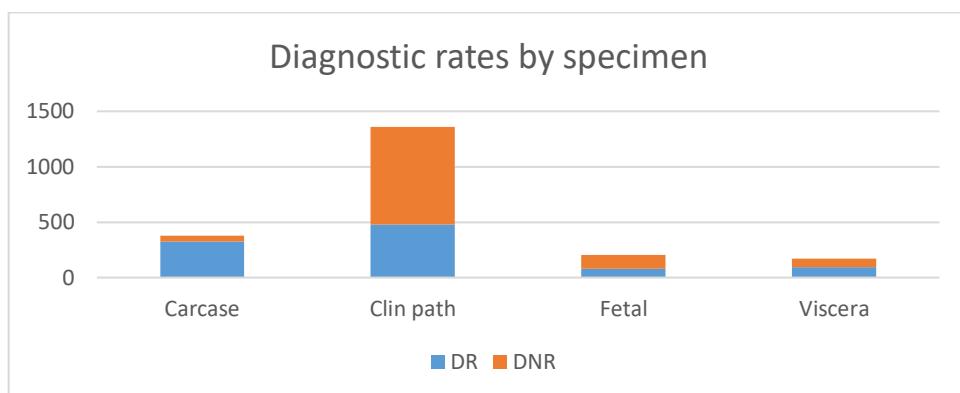


Figure 3: Comparison of diagnostic submissions by specimen type for which a diagnosis was reached (DR) and no diagnosis was reached (DNR), respectively.

Across all species groups parasitic and bacterial infections accounted for most diagnoses. Whilst there are species specific conditions, cross-species transmission of infections manifested themselves with Johne's disease and fasciolosis diagnoses in camelids; coccidiosis on the other hand is caused by host specific *Eimeria* species and was commonly diagnosed in birds and cattle as well as in one otter.

Species	Diagnosis	Count	Species	Diagnosis	Count
Birds	Egg peritonitis/salpingitis complex	6	Native wildlife	Trauma and predation	4
Birds	Coccidiosis	2	Native wildlife	Oral trichomonosis (avian)	1
Birds	Tuberculosis	2	Native wildlife	Coccidiosis	1
Camelids	Johne's disease	2	Pigs	<i>H. parasuis</i> infection	3
Camelids	Fasciolosis	1	Pigs	Arthritis due to <i>Mycoplasma</i>	2
Camelids	Hypogammaglobulinaemia	1	Pigs	Exudative epidermitis	2
Cattle	Johne's disease	101	Small ruminants	Nematodirosis	39
Cattle	Cryptosporidiosis	44	Small ruminants	Cl. perfringens D infection	31
Cattle	Coccidiosis	32	Small ruminants	Parasitic gastroenteritis	30

Table 2: Most commonly reached diagnoses in the last quarter by species groups.

Selected cases

Sheep

Nematodirus – 39 diagnoses of Nematodirus were confirmed in submissions during this quarter – one in April, five in May and 29 in June, which is consistent with expectations. All hubs sent a communication about Nematodirus to their local practices.

While more cases of Nematodirus have been diagnosed in Scotland in April–June this year than in the same time period in 2020 and 2021, it seems that the delayed warmth this summer has not had a significant impact upon the timing of diagnoses of Nematodirus cases.

Salmonella Montevideo – A large abortion outbreak in an upland/hill flock caused by an apparently unusual strain of *Salmonella enterica* Montevideo was investigated by SRUC. Samples were submitted and a farm visit was undertaken. The size and severity of the outbreak was deemed likely to be related to management related. Unusual about this case was that the strain of Salmonella Montevideo was less closely related to other strains previously isolated in Scotland, and occurred in Perthshire, where outbreaks are not often seen.

Suspected ovine white liver disease – Ovine white liver disease was suspected to be the cause of death in a three-week-old Texel cross lamb. At post-mortem examination abdominal haemorrhage was found and the liver was large, pale and friable, with a tear present in the left lobe. Histopathology revealed widespread lipid accumulation consistent with hepatic lipidosis and the lamb had low liver cobalt levels (<0.02 mg/kg DM, reference range >/= 0.06 mg/kg DM).

Cattle

Osteochondrosis – Osteochondrosis was diagnosed in ten-month-old Holstein cross finished on home mix of 80% barley, 5% soya and 15% beet pulp with no mineral supplementation. Silage was available. Extensive OCD lesions were present on the distal humerus and distal femur. OCD lesions were also identified on the rib by histopathology. SRUC advised that these are uncommon and reflect the severity of the OCD. Around 10% of animals in a group of 40–50 were affected. The farm had previously fed minerals but had stopped with this group and gave salt licks instead. mineral and vitamin deficiencies, low dietary calcium relative to growth rate, genetic factors, high energy diets and hard flooring have all been implicated as risk factors in various reports. It was advised that a mineral for animals on an intensive finishing diet should contain high calcium (24%), low P and Mg (3% or less) and be fed at 150g/head. Photos available.

Keratitis/conjunctivitis – A WhatsApp conversation began investigation into an outbreak of keratitis/conjunctivitis in a 75 cow suckler herd. Cows calved between December and June, with calves weaned in October and housed. Baled silage (2019 cut), draff and minerals were being fed, and several other groups of animals including breeding bulls and weaned calves were on the same diet without any issues. The first cases occurred in February, with five cows affected, but over the next six weeks, a further 22 animals were affected with one or more corneal opacities, blepharospasm and watery discharge. If not treated early, they progressed to corneal ulceration and/or hyperkeratosis. Response rate to either oxytetracycline or florfenicol (sub-conjunctival or systemically) along with steroid was good in early treated cases. Efforts were made to reduce irritation of the eyes by stopping using the bedding machine, hand feeding silage (so that silage was not contacting cows eyes during feeding), opening up the gable end of a building to improve airflow, as well as changing to 2020 made silage. No new cases occurred in the last weeks of March or first weeks of April, but since 17th April a further 17 animals have been affected and treated. In total an estimated 60% of the calving cows have been affected. A swab taken from an acute case produced a pure and profuse growth of *Listeria monocytogenes*.

Congenital malformation in a calf due to Schmallenberg virus, infection acquired prior to importation from Germany. A dairy farm in Ayrshire imported 12 heifers from Germany in mid-April. One month later, after assistance, one of these heifers delivered a calf with clinical signs of torticollis and arthrogryposis. On-farm post-mortem examination was performed by the private veterinary surgeon and samples submitted to SRUCVS to check for evidence of Schmallenberg virus (SBV) infection. The dam blood was found to be positive for antibodies to SBV. Histological examination of the spinal cord identified micromyelia with marked reduction in numbers of ventral horn neurones. Examination of the brain identified multifocal absence of ependyma including within the mesencephalic aqueduct, with gliosis in the subventricular neuroparenchyma. SRUCVS considered these lesions typical of in utero teratogenic orthobunyaviral (Schmallenberg) infection towards the end of the risk period of 30–150 days gestation. Although cerebellar tissue tested negative for SBV RNA by PCR, this did not preclude the diagnosis. The dam of the affected calf would likely have been infected with SBV between September 2020 and January 2021 and would not have been viraemic at the time of importation. The time of importation (mid-April) would not be considered within the vector period and this year temperatures in April were lower than average. The importation of these heifers was therefore considered to represent a low risk of introduction of SBV to the area.