Animal & Plant Health Agency

SRUC

GB miscellaneous & exotic farmed species quarterly report

Disease surveillance and emerging threats

Volume 28: Q1 – January-March 2021

Highlights

- Mesothelioma in an aged alpaca - page 5
- Sarcoptic mange and pneumonia in an alpaca - page 6
- Malignant Catarrhal Fever (OvHV-2 infection) in Deer - page 9 and 10

Contents

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Introduction and overview

This quarterly report reviews disease trends and disease threats for the first quarter, January-March, 2021.It contains analyses carried out on disease data gathered from APHA, Veterinary Services division of Scotland's Rural College (SRUC) and partner postmortem providers and intelligence gathered through the Miscellaneous Species Expert Group networks. In addition, links to other sources of information including reports from other parts of the APHA and Defra agencies are included. A full explanation of how data is analysed is provided in the annexe available on GOV.UK
https://www.gov.uk/government/publications/information-on-data-analysis

Issues & Trends

New Postmortem Providers join APHA's Scanning Surveillance Network in England and Wales

The APHA's postmortem examination and diagnostic testing service provides a major component of the GB scanning surveillance network. The network works closely with vets and farmers to detect and investigate new or re-emerging disease, and diagnose endemic diseases in farm animals.

The APHA Surveillance Intelligence Unit and Surveillance and Laboratory Services Department are very pleased to announce that during January and February 2021, three additional postmortem examination (PME) providers have joined the scanning surveillance network. These are the Universities of Cambridge, Liverpool and Nottingham.

This broadens the expertise of, and contributors to, livestock disease surveillance in England and Wales and also brings livestock premises in the areas they cover closer to a postmortem provider.

The new PME providers join the seven current PME Providers (Royal Veterinary College, Universities of Surrey, Bristol, Cambridge and Liverpool, the Wales Veterinary Science Centre, and SRUC Veterinary Services St Boswells) that work together with the six APHA Veterinary Investigation Centres, all of which will continue their valued contribution to scanning surveillance.

Key points about accessing PME in APHA's scanning surveillance network:

- Each PME Provider has an assigned area as shown in colour on the map on this link: http://apha.defra.gov.uk/documents/surveillance/maps/england-wales-map20.pdf
- Within each assigned area, the hatched area shows where premises are eligible for free carcase collection and delivery of animals to the PME Provider
- Premises within non-hatched areas need to arrange to deliver animals themselves

- The postcode search tool identifies and provides contact details for the allocated PME provider and indicates if the premises is eligible for free carcase collection. This is based on the postcode of the premises from where an animal is to be submitted rather than a veterinary practice: http://apha.defra.gov.uk/postcode/pme.asp
- To arrange a PME, the vet calls the relevant PME provider to speak to the duty VIO/vet.
- There will be some livestock premises for which the allocated PME provider has changed, and the free carcase collection service may no longer be provided for some holdings. The APHA postcode search tool allows farmers and vets to see the situation for individual premises.

More information about APHA's scanning surveillance and diagnostic services is available on Vet Gateway (link) below and in the attached farmer and vet information leaflets which include a map showing the PME sites.

http://apha.defra.gov.uk/vet-gateway/surveillance/index.htm

Please do let me know if you have queries which are not addressed in this communication, or contact the APHA Surveillance Intelligence Unit SIU@apha.gov.uk for more information.

Diagnostic submission trends

Diagnostic submissions in Quarter 1, (January to March) for alpacas, llamas and farmed deer (Table 1) – the APHA figures include submissions to partner post mortem providers (PPP) . Other miscellaneous and exotic species may also be received in small numbers.

	Non Carcase Submissions			Carcase Submissions			
Jan-Mar	**APHA**	**SAC**	**Total**	**APHA**	**SAC**	**Total**	**GrTotal**
2017	61	19	**80**	25	7	**32**	**112**
2018	28	15	**43**	36	16	**52**	**95**
2019	15	20	**35**	25	9	**34**	**69**
2020	25	7	**32**	25	5	**30**	**62**
2021	13	15	**28**	26	9	**35**	**63**

Table 1 - Diagnostic submissions in Quarter 1 (January-March) for alpacas, llamas and farmed deer for all years (2017-2021)

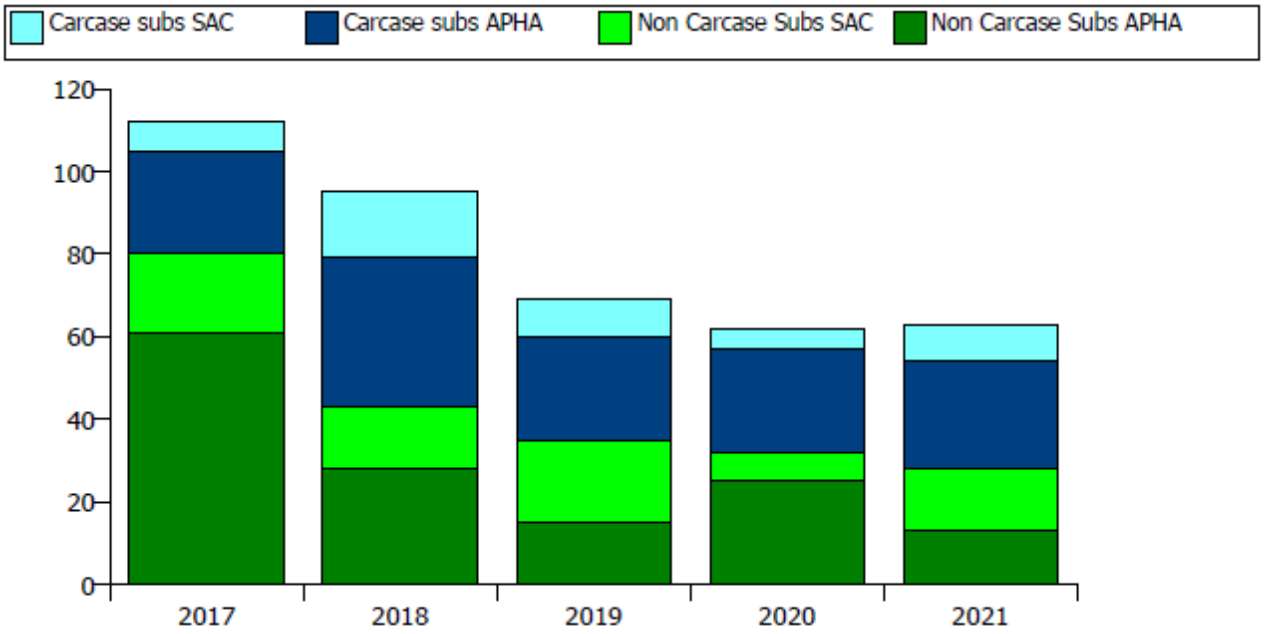

Figure 1 - Carcase and non-carcase submissions for Quarter 1 (Januray-March) for all years (2017-2021)

Total diagnostic submissions for Quarter 1 for all years (2017-2021) for each main species covered by this report and also for each main geographical area (Table 2).

All Years	ALPACA	DEER	LLAMA	Summary
Eastern England	68	28	7	**103**
Northern England	45	11	3	**59**
Scotland	43	42	7	**92**
Wales	18	4	2	**24**
Western England	55	18	5	**78**
Unknown	35	4	6	**45**
Summary	**264**	**107**	**30**	**401**

Table 2 - Total diagnostic submissions for Quarter 1 (January-March) for all years (2017-2021) for the different areas.

New and re-emerging diseases and threats

Nothing to report this quarter.

Diagnoses from the GB scanning surveillance network including unusual diagnoses

Camelids

Mesothelioma in an aged alpaca

An 18-year-old alpaca was euthanased after it had deteriorated in condition and collapsed over a period of a week. The abdomen was distended with a large quantity of straw coloured fluid, and there were many variably sized masses within the greater omentum and mesentery, and also around the intestines and protruding from the surface of the liver. The masses (Figures 2 and 3) were white to cream, glistening and firm, and some had cystic centres. Histological examination confirmed that the masses in the peritoneal cavity and invading the liver were neoplastic, and although the neoplasm was poorly differentiated it was suspected that a mesothelioma was the most likely identity.

Figure 2 - disseminated mesothelioma

Figure 3 - disseminated mesothelioma (close-up)

Acidosis in a cria

The carcase of a six-month-old cria was submitted for postmortem examination after it died in the veterinary practice where it was taken after exhibiting a distended abdomen and signs of colic. The cria had a low body temperature before dying. The cria's dam died a couple of months previously, so it was bottle fed before weaning and had a history of gradual ill thrift and recumbency. At postmortem the abdomen was unusually distended, the C1/C2 was full and accompanied by some fluid and gas and the pH was low at 4.7. There was weight loss with serous atrophy of the fat indicating negative energy balance over some time. However there was a good fill of food in the forestomachs. Death was due to circulatory shock arising from the bloating and acidosis in the forestomachs. If the animal had suddenly started eating after a period of inappetence, this could have contributed to the problem.

Sarcoptic mange and pneumonia in an alpaca

Three males had died recently out of a group of 10 males. They were grazing over five-six acres and also receiving supplementary feed. There was a recognised problem with mange and some alpacas were losing body condition. The submitted animal had been given ivermectin 10 days earlier.

At PME:

- The alpaca was in very poor body condition almost emaciated

- There were extensive lesions of reddened skin and scabs over the axillae, inguinal region and limbs (Figure 4)
- The small intestine contained watery green content and the caecum and colon contained liquid green content. The faeces were soft
- Approximately 70% of the lung on both sides was consolidated with a cranioventral distribution. The associated lymph nodes appeared normal.

Parasitology detected live S*arcoptes scabiei* mites from the skin lesions (Figure 5) and 60 *E. macusaniensis* oocysts per gram faeces. It was suspected that advanced sarcoptic mange contributed to the ill thrift and death of this alpaca and advised that the treatment plan for mange in this herd was reviewed. For information on skin diseases of South American Camelids, see Foster et al. (2017). *Eimeria macusaniensis* oocysts were detected in small numbers and may have been in part contributing to the weight loss and soft faeces. A large part of the ventral part of both lungs were consolidated (Figure 6) and an acute suppurative bronchopneumonia was identified on histopathology. *Bibersteinia trehalosi* and an unidentified *Streptococcus species* were cultured from lung. It was suspected that debilitation predisposed to an acute suppurative pneumonia.

No worms or worm eggs were detected although as the alpaca had been recently treated, previous PGE and associated gut damage may have contributed to ill thrift.

Figure 4 - Reddening and crusting of inguinal skin due to sarcoptic mange in an alpaca

Figure 5 - Microscopic image of Sarcoptes mite from an alpaca

Figure 6 - Pneumonia in an alpaca, showing extensive dark red consolidation of lungs

Neoplasia in a 16-year-old alpaca

A 16-year-old alpaca died after a two week period of loss of condition and increased respiratory effort. It had maintained a good appetite and was in a group of four with the others unaffected. There was significant pathology in the thoracic cavity with a generalised infiltration of all lung lobes with pale to white firm tissue (Figure 7) particularly along the ventral border of the lung lobes. There were multiple areas of emphysema and also a large mass approximately 10cm diameter in the area of the mediastinal lymph nodes, consisting of aggregations of irregularly shaped pale soft tissue. Histology confirmed the suspicion of neoplasia and examination of lung and lymph node confirmed multifocal, high malignancy, round cell neoplasia. The PME findings and morphological characteristics of the cells

suggested the most likely differentials would be multicentric round cell neoplasia or malignant lymphomas.

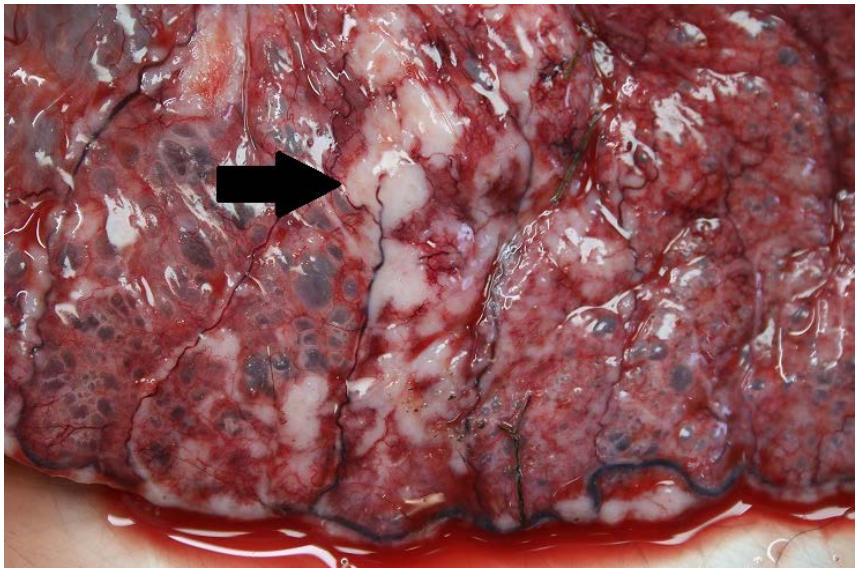

Figure 7 - Infiltration of caudal lung lobe with neoplastic tissue

Neoplasia in an adult alpaca

In a separate submission, metastatic lymphoma was also diagnosed in a nine-year-old female alpaca with a history of weight loss and respiratory disease signs that had responded poorly to treatment. The two other alpacas on the holding were clinically well. Grossly there were localised miliary pale lesions on the ventral liver lobe and multiple diffuse pale areas throughout the lungs. These lesions could not be distinguished from tuberculosis and the case was reported to the APHA field team. Histopathology was undertaken on the affected lung tissue which revealed non-encapsulated, severe parenchymal infiltration of round cells consistent with an infiltrative lymphoma. TB cultures were negative.

Farmed Deer

Acute death in a red deer calf due to Malignant Catarrhal Fever (OvHV-2 infection)

A six-month-old Red deer calf was found dead without showing any prior clinical signs. The calf was well grown, currently housed and had been treated with two doses of ivermectin since housing. One other calf of a similar age had died about three weeks previously, again with no prior signs of ill health. A field postmortem was performed by the private veterinary surgeon and findings included enlarged mesenteric lymph nodes, haemorrhagic diarrhoea and a pericardial effusion.

Ovine Herpesvirus-2 (OvHV-2) was detected by PCR testing of fresh spleen, confirming Malignant Catarrhal Fever (MCF). A diagnosis of MCF was consistent with the necropsy

findings described. MCF is usually fatal and sporadic but some “outbreaks” have been reported. In the UK, OvHV-2, which is carried asymptomatically by sheep, is the most likely form of the virus to infect susceptible ruminants. Infection results from contact between susceptible animals and infectious sheep, or by indirect contact via handling equipment. Clinical signs may occur about two weeks after such contact but this interval may be prolonged. Sudden death can be a feature of infection in deer. It was not known whether the deer had had previous contact with sheep.

MCF in a reindeer

A 14-year-old male castrated reindeer was submitted for PME to investigate weakness, recumbency and terminal convulsions. Droppings were reported to have been normal and no nasal discharge was seen. It was the only animal affected from a housed group of five, part of a herd of 56. The paddocks used when turned out were previously used for sheep grazing and direct contact with sheep was also possible via one boundary fence.

PME found:

- cloudy eyes with slight reddening of ocular mucosa
- congested liver, lungs and meningeal vessels
- haemorrhages of duodenal mucosa and kidney cortex
- dark red liquid caecal content
- patch of crusty/alopecic skin on the medial aspect of the right hind leg

PCR testing of spleen detected OvHV-2 DNA confirming a diagnosis of Malignant Catarrhal Fever (MCF), which would account for the clinical presentation and range of gross pathological changes seen at postmortem examination. Histopathology identified vascular lesions in the brain, lung, kidney and spleen which are consistent with MCF.

Chorioptes sp. mites were detected from the skin lesion on the right hind limb.

Horizon scanning

Covid-19 effects

As described in previous quarterly reports, the current Covid-19 crisis has continued to have an impact on the number of camelid and farmed deer carcase submissions to the GB scanning surveillance network during Q1,2021. This may impact our ability to monitor endemic disease trends as well as detecting new and re-emerging diseases through the surveillance network. The other livestock species submission numbers have not been adversely affected to the same degree by the current pandemic crisis. Communications have been sent to veterinary practices to indicate that the Veterinary Investigation Centres and Post mortem partnersare continuing to function throughout and encouraged veterinary practitioners to make contact to discuss cases. The situation may improve over the coming months as Covid lockdown restrictions ease and are finally lifted.

Publications

None this Quarter.

References

Foster, A., Jackson, A. and D'Alterio, G.L. (2007), Skin diseases of South American camelids. In Practice, 29: 216-223. https://doi.org/10.1136/inpract.29.4.216

Statement regarding use of this material

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https://www.gov.uk/government/collections/animal-disease-surveillance-reports

Any enquiries regarding this publication should be sent to us at SIU@apha.gov.uk

http://apha.defra.gov.uk/vet-gateway/surveillance/index.htm

The Animal and Plant Health Agency (APHA) is an executive agency of the Department for Environment, Food & Rural Affairs, and also works on behalf of the Scottish Government and Welsh Government.