Animal & Plant Health Agency

SRUC

GB cattle quarterly report

Disease surveillance and emerging threats

Volume 28: Quarter 4 (October - December) 2024

Highlights

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Introduction and overview

This quarterly report reviews disease trends and threats for the fourth quarter of 2024 (Q4), October to December. It is compiled using data available at the time of writing. It contains analyses carried out on disease data gathered from APHA, SRUC Veterinary Services division of Scotland's Rural College (SRUC) and partner postmortem providers; and intelligence gathered through the Cattle 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

Dairy sector update

- **Prices:** UK farmgate milk prices averaged 47.09ppl in December, which was up by 0.39ppl (0.8%) on the month. Throughout Q4, we saw prices increase across most contracts on the AHDB league table. Wholesale dairy product prices peaked in October for cream and cheddar, while butter remained elevated throughout Q4 as limited supply and strong demand continued.
- Production: UK milk production totalled 3.7 billion litres for the fourth quarter of 2024, up by 4.5% on the same period of the previous year. After a challenging start to the year improved levels of production since September have helped to revive overall output levels. Milk prices have incentivised further production into 2025.
- **Trade:** Year-to-date (Jan-Nov) volumes of dairy exports from the UK totalled 1.13million tonnes a 0.8% increase compared to the same period of the previous year. These exports were valued at £1.70 billion in 2024. Import volumes for the same period were 1.15 million tonnes, an 8% increase year on year.
- **Demand:** During the 52 weeks ending 28 December 2024, volumes of cow's dairy sold in retail declined by 0.6% year-on-year (YOY). Spend on cow's dairy grew 0.5% year-on-year, driven by growth in average prices of 1.0%. (Copyright © 2025 Nielsen Consumer LLC. All Rights Reserved).

Beef sector update

- **Prices**: GB deadweight prime prices have shown significant strength throughout Q4, with the average all-prime price reaching record highs of 546p/kg in the week ending 21 December, a 13% increase from the previous year's figure. Cull cow prices have also seen very strong prices over the 3 months, standing at 369p/kg in the last week of December, 20% up YOY.
- **Production**: UK beef production totalled 69,000 tonnes in December, up by 3% year on year but down by 14% from the previous month. Production for the year of 2024 totalled 934,000 tonnes, up by 4% from 2023, driven by strong demand and prices. Prime carcase weights in each month of Q4 matched 2023 levels, averaging 340kg in December.
- **Trade**: In terms of UK beef trade, imports of fresh & frozen beef totalled 22,700 tonnes in November, up by 13% YOY. Export volumes sat at 11,000 tonnes for the

month, down 1% YOY. For the YTD (Jan-Nov) beef imports stood at 221,000 tonnes (+8% YOY), while exports totalled 104,000 tonnes (+8% YOY).

- **Demand**: In the 12 weeks to 29 December, spend on beef in retail increased by 4.4% year-on-year, and volumes saw a marginal increase of 0.1%. Prices paid rose by 4.3% on average across all beef products. While primary beef volumes saw a slight decrease (-0.2%) this period, processed beef (+2%) drove the overall volume increase, with burgers and grills (+2%) having benefitted from an increase in both purchasing frequency and shopper numbers.

Acknowledgment for the dairy and beef updates: Annabel Twinberrow AHDB.

Bluetongue serotype 3 (BTV-3) update

The first case of the season was confirmed in a ram in Norfolk on 26 August 2024. The affected animal presented with inappetence, ulcers in the mouth, mild crusting around the nostrils, and lameness in one leg. The total number of confirmed cases in GB by the end of December for the season, was 188. Examples of the clinical signs seen for BTV-3 can be found here: Pictures of clinical cases confirmed with bluetongue serotype 3 infection.

Bluetongue virus is a notifiable disease. Suspicion of bluetongue virus in animals must be reported to the Animal and Plant Health Agency on 03000 200 301 in England, on 03003 038 268 in Wales, and to the local Field Services Office in Scotland.

Further guidance and information are available on the Ruminant Health & Welfare site, Bluetongue: information and guidance for livestock keepers (GOV.UK) and on Bluetongue: how to spot and report it (GOV.UK).

A diagnosis of Bovine Papular Stomatitis Virus (BPSV) in a negated BTV report case in pre-weaned calves

A selection of samples, including skin biopsies, were submitted from pre-weaned calves exhibiting circular erosions of the nasal mucosa, and malaise. The case had been reported as a suspected bluetongue and negated. Histological examination identified mild changes in Calf 1, with intercellular oedema and rare lymphocytes. In Calf 2 there was a more marked dermatitis, with possible intracytoplasmic inclusions. These findings were suggestive of Bovine Papular Stomatitis Virus (BPSV) and IHC for this pathogen has returned strongly positive in Calf 2, confirming this diagnosis. BPSV is typically seen in calves, sometimes up to one year of age. Treatment is usually not necessary in uncomplicated cases. Transmission can be reduced by avoiding the use of shared feeding buckets/teats, and strict hygiene and disinfection of feeding equipment. It is worth noting that, while less commonly reported than in other parapoxvirus infections, BPSV is potentially zoonotic (Holmes *et al.,* 2011: Zoonotic transmission of bovine papular stomatitis virus - Holmes - 2011 - Veterinary Record - Wiley Online Library). Appropriate hygiene advice should be provided to farm staff dealing with clinically affected animals.

Cattle disease surveillance dashboard outputs

The most frequent diagnoses from carcase submissions made in Q4 of 2024, compared to Q4 in 2023, and Q4 for 2015 to 2024 inclusive, through the Great Britain (England, Wales, and Scotland) scanning surveillance network, are illustrated in Table 1. These can be interrogated further using the interactive cattle disease surveillance dashboard which was launched in October 2017.

Table 1: Great Britain scanning surveillance 10 most frequent carcase submission diagnoses in Q4 of 2024, Q4 of 2023, and Q4 for 2015-2024

10 most frequent carcase diagnoses Q4 2024	10 most frequent carcase diagnoses Q4 2023	10 most frequent carcase diagnoses Q4 2015-2024
1. Pneumonia due to *Mycoplasma bovis*	1. Pneumonia due to *Pasteurella multocida*	1. Pneumonia due to *Mycoplasma bovis*
2. Pneumonia due to *Mannheimia haemolytica*	2. Pneumonia due to *Mycoplasma bovis*	2. Pneumonia due to *Pasteurella multocida*
3. Pneumonia due to *Pasteurella multocida*	3. Pneumonia due to *Mannheimia haemolytica*	3. Pneumonia due to *Mannheimia haemolytica*
4. Pneumonia – not otherwise specified	4. Pneumonia due to *Histophilus somni*	4. Pneumonia – not otherwise specified
5. Pneumonia due to *Histophilus somni*	5. Pneumonia – not otherwise specified	5. Cryptosporidiosis
6. Ruminal acidosis	6. Salmonellosis due to S. Dublin	6. Pneumonia due to *Histophilus somni*
7. Cryptosporidiosis	7. Cryptosporidiosis	7. Digestive disease due to other causes (not listed)
8. Digestive disease due to other causes (not listed)	8. Parasitic gastroenteritis	8. Pneumonia due to BRSV
9. Pneumonia due to BRSV	9. Pneumonia - parasitic	9. Salmonellosis due to S. Dublin
10. Pneumonia - parasitic	10. Digestive disease due to other causes (not listed)	10. Rotaviral enteritis

As for the previous quarter, the ‘pneumonia not otherwise specified’ cases included embolic pneumonia related to either udder cleft dermatitis or to ruminal acidosis.

The digestive system cases which were classed as ‘diagnoses not listed’ included combinations of impactions of the rumen, abomasum, and omasum; a foreign body penetration through the pharynx and upper oesophagus; abomasal rupture; peritonitis; bacterial enteritis (suspected as yersiniosis); and hepatic fibrosis.

New and re-emerging diseases and threats

Changes in disease patterns and unusual diagnoses

Systemic disease

Tick borne disease update

Diagnoses of tick-borne disease using the dual assay *Babesia* and *Anaplasma* PCR continued throughout Q4, showing a strong Southwest England distribution to cases. In October, blood samples were submitted from two typical cases to investigate transient illness in adult animals from a beef suckler herd in North Devon. Affected animals showed malaise, separation from the rest of the herd, and mild pyrexia which improved within a few days. Heavy tick burdens were reported. PCR testing proved positive for *Anaplasma phagocytophilum* confirming Tick Borne Fever infection.

In another case, babesiosis was diagnosed in a twelve-year-old suckler cow grazing meadow pasture in Dorset. She presented with severe jaundice prior to death and postmortem examination additionally revealed dark red coloured urine (Figure 1) and splenomegaly. One tick was noted on the carcase. The dual assay *Babesia*/*Anaplasma* PCR was utilised on a spleen sample which confirmed a diagnosis of babesiosis caused by *Babesia divergens*. It was unknown as to whether babesiosis had previously been an issue on this holding.

Although most cattle tick-borne disease cases are diagnosed in Southwest England, small geographical areas of infection exist elsewhere. This was demonstrated by a case of babesiosis diagnosed in Norfolk in early October. The submitted suckler cow, one of five affected in a group of 17, had presented with ataxia and recumbency before death. Red urine (haemoglobinuria) and pale mucous membranes were also present. Historically, tick-borne disease has been much less reported in East Anglia compared to western areas. A review of the VIDA data shows 14 diagnoses of babesiosis made in East England in the last 25 years, accounting for just 5% of the total babesiosis diagnoses (n=282) recorded during this time. The condition had previously been diagnosed by APHA on this farm in 2013, and the farm had suspected cases in the following years.

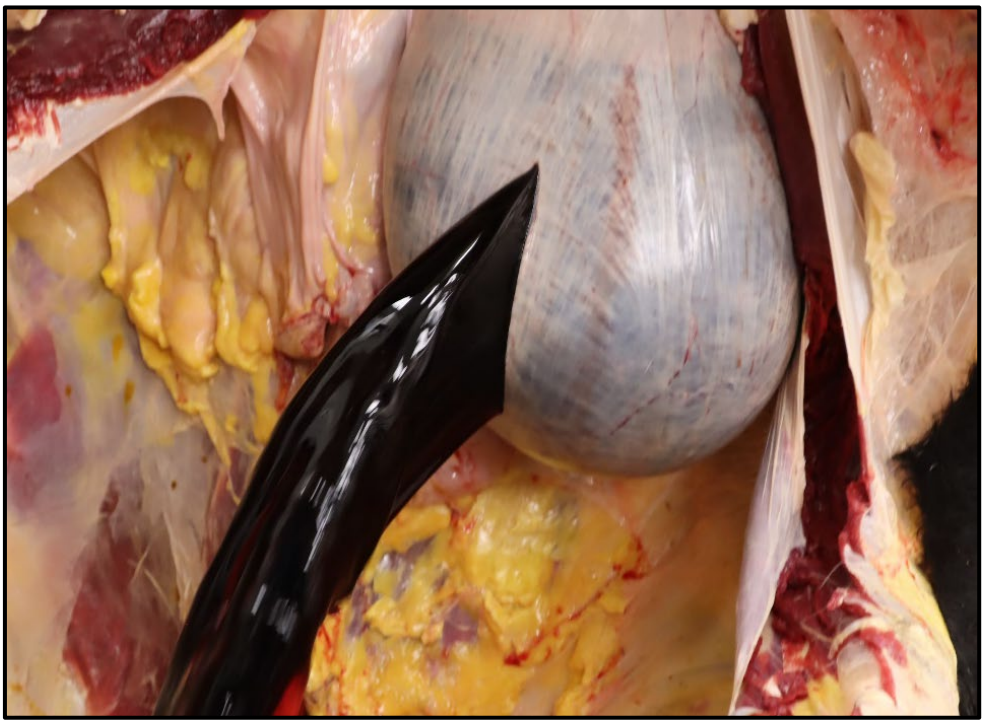

Figure 1: Profound haemoglobinuria in a pale, jaundiced cow due to intravascular haemolysis by *Babesia divergens.*

Digestive system disease

Yersiniosis in dairy youngstock

Several clinical yersiniosis outbreaks were investigated by Starcross and Carmarthen Veterinary Investigation Centres during Q4 of 2024. Cases occurred in groups of 40-50 dairy heifers, ranging from yearlings to fresh-calved 2-year-olds, either at grass, or shortly after housing. In each case, between 20 and 50% of the group were affected by severe enteritis, weight loss and malaise, with three to five deaths reported. At postmortem examination, poor body condition and thickening of the small intestines were seen. Intestinal mucosa was often coated with mucoid or foamy material. Yersiniosis was confirmed by culture and/or histopathology. An example of a recent case of enteritis due to *Yersinia pseudotuberculosis* in a sheep is shown in Figure 2.

Yersiniosis is associated with infection with *Yersinia pseudotuberculosis*, a Gram-negative bacillus that is common in the environment, and a common inhabitant of the gastrointestinal tract of several birds and mammals. It is a facultative anaerobe that thrives in cool, wet or waterlogged, low-oxygen environmental conditions. The presence of the organism does not necessarily lead to disease; both environmental conditions that allow *Yersinia pseudotuberculosis* to multiply to high levels, and impaired host immune responses, are likely to be required for disease to occur. Risk factors may include sub-optimal nutrition (energy or protein imbalance), micronutrient deficiency, diet change, adverse weather conditions, transport, pregnancy, lactation, social changes and concurrent disease, that may include gastrointestinal parasites, other enteric pathogens, and bovine viral diarrhoea virus infection.

A farm visit to one herd identified both environmental conditions conducive to high *Yersinia pseudotuberculosis* exposure (drinking from ponds, insufficient grazing with poached areas) and host risk factors (pregnancy and calving, transport, sudden diet change, social stress of joining the milking herd) that may have impacted the immune response. In the younger groups, shortage of grass and parasitic gastroenteritis (PGE) were identified as likely risk factors for clinical yersiniosis.

Yersiniosis is infrequently detected in GB but is more frequently reported in countries such as Australia and New Zealand. However, warmer GB autumn conditions, with continued grass growth, allow an extended grazing season, especially in the south-west of GB where grazed grass often provides an important feed source for both beef and dairy youngstock. This may increase the risk of both exposure to high environmental *Yersinia pseudotuberculosis* levels, and to predisposing conditions such as PGE, suboptimal nutrition, trace element deficiencies and adverse weather events.

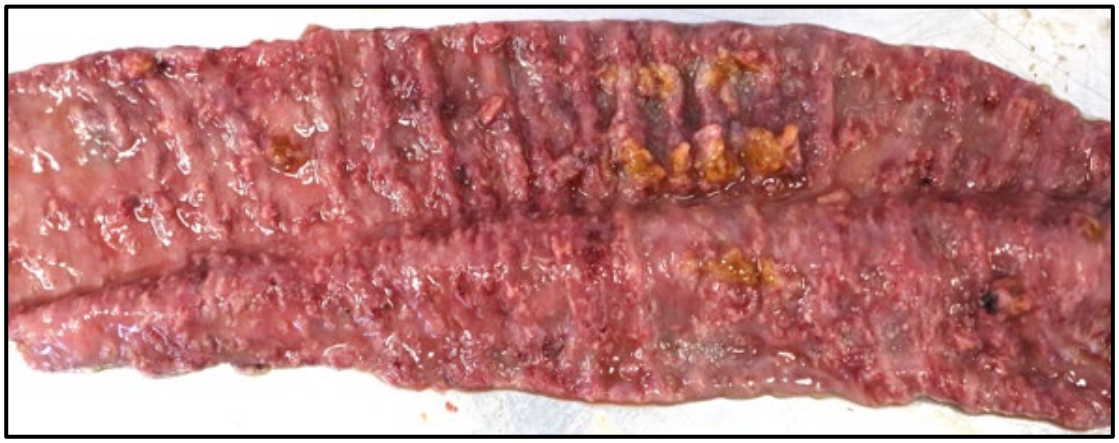

Figure 2: Thickening and mucosal ulceration of the small intestine in a sheep with yersiniosis

Parasitic gastroenteritis (PGE) associated with the hookworm *Bunostomum phlebotomum*

Bristol Veterinary School and Nottingham Veterinary School both diagnosed parasitic gastroenteritis (PGE) due to *Bunostomum phlebotomum* in this quarter. This is a small intestinal parasite that has not been diagnosed across the postmortem provider network for many years. The affected cattle had pale carcasses, suggestive of anaemia, and oedema of the subcutaneous tissues, suggestive of hypoproteinaema. Many large white worms (up to 3cm long) were seen in the small intestine (Figure 3). In both cases, the cattle had never grazed. A letter to raise awareness of this parasite, and considering PGE in housed cattle, will be published.

Figure 3: Bunstomum phlebotomum from small intestinal content wash of a steer

Jejunal haemorrhagic syndrome (JHS)

Two cases of jejunal haemorrhagic syndrome were diagnosed by Shrewsbury VIC during Q4, both in adult dairy cows which presented with an acute history of malaise and reduced activity prior to death. Postmortem findings were of a large linear luminal blood clot within the jejunum, with one case additionally demonstrating serosal necrosis consistent with the condition.

It has been hypothesised that *Clostridium perfringens* type A and fungal infections may have a role in the pathogenesis of these conditions, however research into this condition is scarce and recent studies do not support these hypotheses. Diagnoses of JHS are made almost entirely in dairy cattle as opposed to beef. Management practices related to high milk production, such as dietary factors relating to the rumen microbiome, have been suggested; however, the pathogenesis and underlying cause remain unknown.

De Jonge B, Pardon B, Goossens E, et al. Hemorrhagic bowel syndrome in dairy cattle: Gross, histological, and microbiological characterization. *Veterinary Pathology*. 2023;60(2):235-244. doi:10.1177/03009858221143402

Berghaus RD, McCluskey BJ, Callan RJ. Risk factors associated with hemorrhagic bowel syndrome in dairy cattle. *J Am Vet Med Assoc*. 2005; 226:1700–1706.

Cases of ruminal acidosis

Ruminal acidosis was the sixth most common diagnosis in Q4 2024 (Table 1), and VIDA data shows a steady increase in frequency of this diagnosis since 2012 (Figure 4). Postweaned animals represented the highest proportion of cases since 2012, accounting for 35% of diagnoses, followed by adult cattle (30%) and preweaned animals (21%).

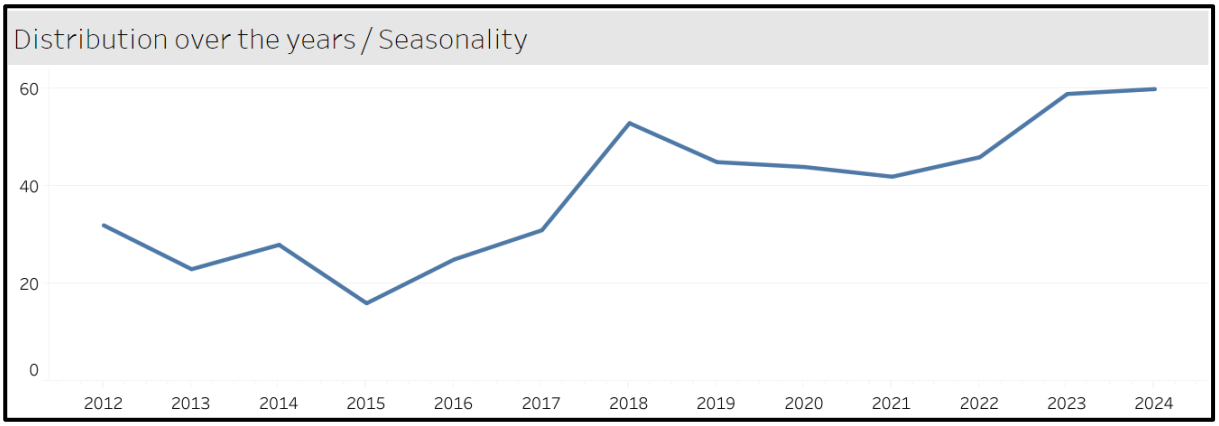

Figure 4: Frequency of diagnosis of ruminal acidosis in cattle, 2012-2024

In Q4, ruminal acidosis was the sole cause of death in some cases. In one such case, an eight-month-old animal, the rumen contents consisted of approximately 40-50% barley, with a sour smell and a pH of 4.2. The calves had had access to adlib barley for the previous two weeks previously, and it was reported that there was limited grazing at the time of death, which likely was a contributing factor in this case. Nutritional mismanagement was also identified in a case of a four-and-a-half -month-old weaned beef calf receiving 4-5kg concentrate pellets/head/day. The unit had previously had a few problems with bloat and the first recent case occurred the day before the constituents of the pellets changed. 'Nutritionally-improved straw pellets' were added to the diet when an increase in bloat cases was observed. The rumen pH was 4.8 and there were 'porridge' consistency contents. The ruminal papillae were firm and clumped, and extensive parakeratosis was identified on histopathology indicating past episodes of rumen acidosis. The findings were consistent with ruminal acidosis and resultant ruminal bloat. A review of the diet in both cases was advised.

Respiratory system

Bovine respiratory syncytial virus (BRSV) update

Bovine respiratory syncytial virus (BRSV) was in the Top 10 most frequent diagnoses from carcase submissions in Q4 2024 (Table 1). SRUC Dumfries reported a significant increase in BRSV diagnoses in 2024, compared to previous years (Figure 5).

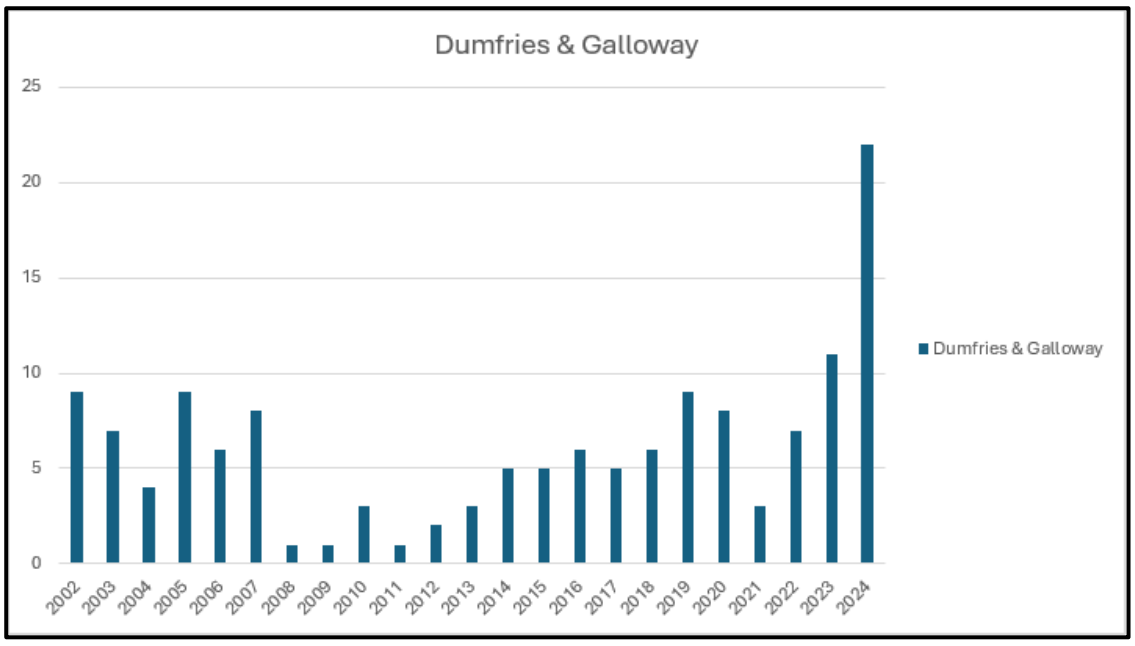

Figure 5: Cases of BRSV diagnosed by SRUC Dumfries 2002-2024

One such BRSV outbreak investigated by SRUC Dumfries occurred on a dairy-beef rearing farm, with calves sourced from two dairy units. Cattle are vaccinated for RSV and PI-3 with intranasal vaccination on arrival. In December 2024, there was a high morbidity and mortality outbreak of respiratory disease, principally affecting 4-5-month-old weaned calves, which was diagnosed as acute RSV, with consistent acute gross and histopathology, and with positive PCR testing results. Affected calves did also have sections of chronic bacterial pathology in the lungs as well, which was not thought to be sufficient to cause death in isolation.

Risk factors for the acute flare up were investigated and it proved difficult to pinpoint these for sure. A second vaccination with intranasal RSV and PI3 vaccine helped bring the outbreak under control. Like many dairy beef units, there was a combination of chronic bacterial type pneumonia, and an acute RSV associated interstitial pneumonia. It is possible that there were two disease processes occurring concurrently, acute interstitial pneumonia and RSV infection.

Infectious bovine rhinotracheitis (IBR) gE bulk milk serology

Table 2 shows the proportion of National Milk Records (NMR) bulk milk samples testing positive for IBR gE antibody (used for herds vaccinating with a gE deleted IBR vaccine), by ELISA. This data is kindly provided under agreement from National Milk Records (NMR) to support the collection of disease surveillance information across GB. NMR provide milk and blood serology testing for endemic disease in cattle. Testing is carried out primarily at the request of vets. Most of the samples tested will be routine quarterly surveillance ('monitoring') and a few may be part of a clinical disease investigation ('diagnostic') but these are not differentiated in Table 2. The values indicate a high level of, and widespread, IBR exposure in England, Scotland, and Wales. In line with agreed APHA reporting, the

number of samples tested is not shown. For further information on this data please contact vetenquiries@nmrp.com.

Table 2: Proportion (%) of NMR bulk milk samples testing positive for IBR gE antibody by ELISA, by country and by quarter

Country and Quarter	2023 Q1	2023 Q2	2023 Q3	2023 Q4	2023 Q1-Q4	2024 Q1	2024 Q2	2024 Q3
GB	73.3	74.3	83.8	81.7	78.1	74.4	52.5	62.9
England	73.1	72.7	84.3	81.2	77.6	73.9	52.0	61.9
Scotland	100	94.4	88.2	94.7	94.4	100	89.5	80.0
Wales	71.1	84.8	78.7	83.5	78.9	73.8	48.8	68.8

Acknowledgements for the IBR data: Eamon Watson MRCVS, NMR Product Strategy Manager and Karen Bond MRCVS, NMR Veterinary Team Lead

Suspected lack of efficacy of a lungworm treatment

Coughing was noted in a group of grazing heifers in mid-September, which prompted administration of ivermectin. In the following week, the coughing persisted and five days post-treatment, five animals were examined with outstretched necks, extended tongues and dyspnoea, and pyrexia; and with increased lung and upper respiratory tract noise. Antibiotics and steroid treatment were administered, and a pooled faecal sample was submitted for Baermann testing. This test revealed the presence of *Dictyocaulus viviparus* (lungworm) larvae, and failure of efficacy was suspected. This was reported to the Veterinary Medicines Directorate as a suspected lack of expected efficacy (SLEE).

Musculoskeletal system

No significant trends this quarter.

Urinary system

No significant trends this quarter.

Nervous system and organs of special sense

Cerebrocortical necrosis (CCN) in heifers grazing a field sprayed with liquid gypsum

A dairy herd reported neurological signs in a group of 50 heifers grazing rented ground that had been cut twice for silage. Four animals became recumbent and hyperaesthetic over a four-week period and were euthanased after failing to respond to treatment.

The carcasses of a seven-month-old Flekvieh cross and a six-month-old Holstein cross were examined postmortem with no significant gross findings. Analysis of vitreous humour ruled out a diagnosis of hypomagnesaemia (1.12 mmol/l and 0.84 mmol/l, reference range ≥0.55 mmol/l) and kidney lead levels were within normal limits (0.09 mg/kg fresh tissue (FT) and 0.13 mg/kg FT, reference range ≤0.2 mg/kg FT). However, histopathology detected polioencephalomalacia consistent with a diagnosis of cerebrocortical necrosis (CCN) in both cases. A further two animals in the group developed clinical signs and improved following treatment with vitamin B1.

The field had been sprayed with liquid gypsum, and this was thought to be the most likely contributory factor in the outbreak. Liquid gypsum (calcium sulphate dihydrate) causes fine soil particles to flocculate, improving drainage, making the ground easier to till and encouraging root development. Sulphate toxicity is a recognised cause of CCN and pasture sampling to measure sulphur levels was advised.

Skin disease

Atypical mycobacteriosis (Skin TB) in dairy cows

Aspirates and skin biopsies were submitted from three adult dairy cows with skin nodules. The nodules had developed following housing 10 months earlier. Most of the lumps were on the lower hind limbs and affecting about 10 animals; they contained thick creamy purulent material. On one cow, the nodules had spread in chains up the forelimb and onto the body (Figure 6). This was reported to APHA field services as a suspect lumpy skin disease (LSD) or cutaneous enzootic bovine leukosis (EBL). Both were negated on testing and then samples were submitted for further investigation.

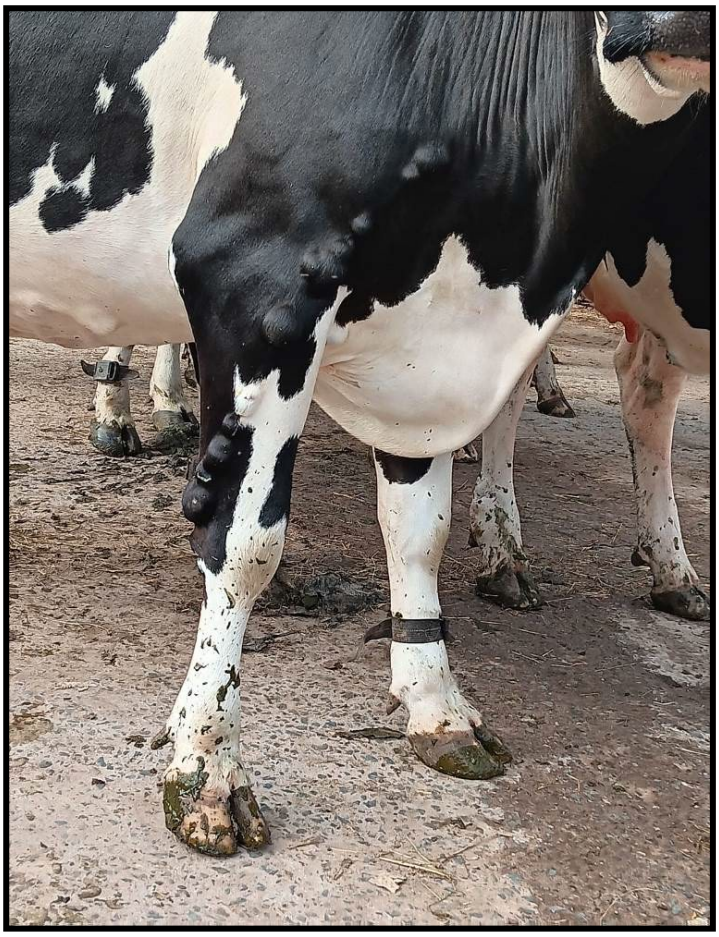

Figure 6: Skin nodules spreading in chains up the forelimb and onto the body in a cow with skin TB

Bacteriology was unrewarding with the isolates cultured likely to be contaminants and not significant. Histopathology confirmed lesions typical of mycobacterial infection (Figure 7), confirming skin TB as the cause of these skin lumps. Further testing including culture, PCR and whole genome sequencing (WGS) of lesion aspirates from all three cows, did not identify the causative organism. It is thought that skin TB is caused by environmental mycobacteria entering via skin abrasions, which is why lesions are commonly seen on lower limbs. The chronicity of the lesions may have affected the identification of the mycobacterial species. *M. kansasii* has been isolated from previous similar cases.

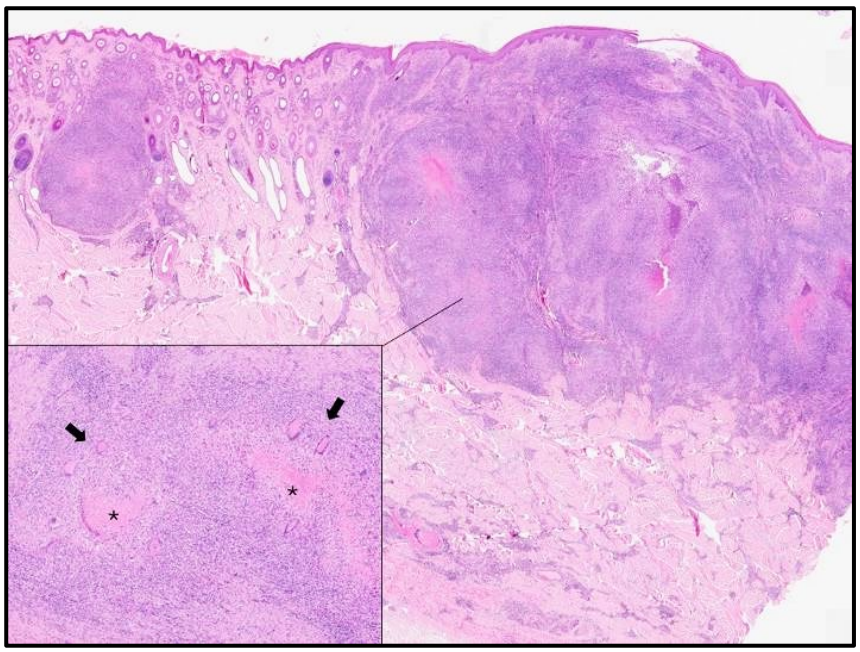

Figure 7: Nodular foci of granulomatous inflammation in the dermis of a cow with skin TB, within inset of one such lesion containing areas of necrosis (asterisks) and multinucleated giant cells (arrows).

Cutaneous epitheliotropic lymphoma in an adult cow

Fixed skin samples were submitted to investigate skin nodules covering the body of an adult cow (Figure 8). It was not known how long the lumps had taken to develop; the cow was not unwell. The case was reported to APHA field services and EBL and LSD were negated on testing.

Figure 8: Skin nodules in an adult cow with lymphoma (with thanks to the private vet)

Histopathology confirmed cutaneous epitheliotropic lymphoma as the cause of the nodular skin lumps in this cow. Sporadic bovine lymphoma (SBL) is usually observed in young animals from one to three years old, and the aetiology is unknown.

Circulatory disease

Thymic lymphoma

An adult dairy cow was euthanased, and the carcase submitted to investigate the cause of jugular vein distension and respiratory distress. Postmortem examination found a large, space-occupying, encapsulated mass in the mediastinum of the cranial thorax and several enlarged lymph nodes. The gross appearance of the mass tissue, homogenously pale cream-pink (Figure 9), was suspicious of neoplasia and triggered the suspicion of Enzootic Bovine Leukosis (EBL). APHA Field Services were notified, and this was subsequently negated by PCR testing. Histopathology confirmed that the mass was a lymphoma, most likely of thymic origin and therefore a sporadic occurrence. Thymic lymphomas can occur in cattle from four months to four years of age, although they are most commonly seen between the ages of six months and two years. They are typically sporadic in nature, however; studies in France have determined a hereditary predisposition for the disease.

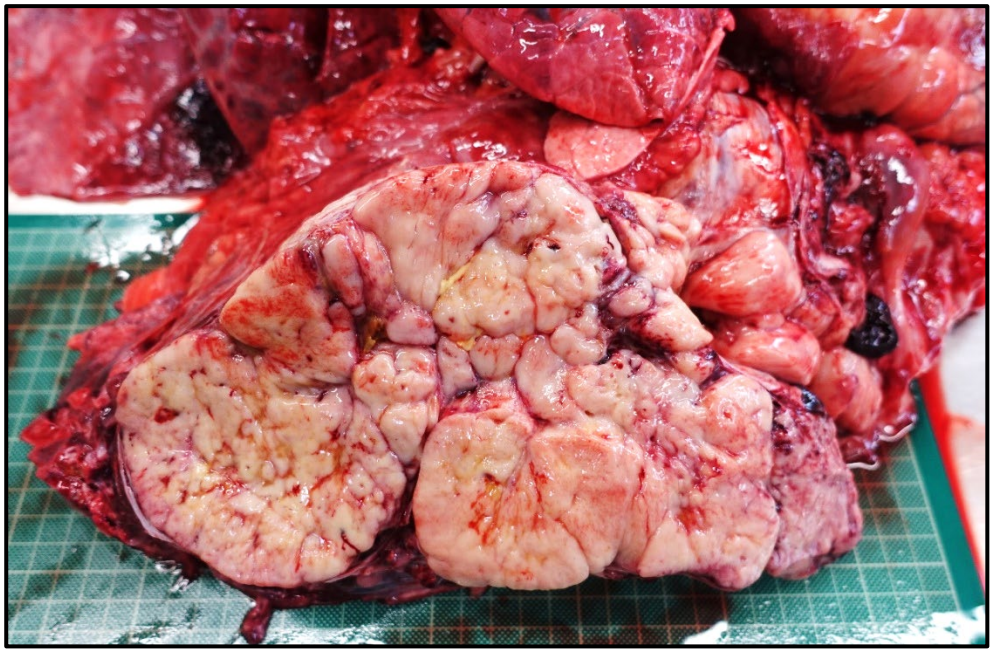

Figure 9: A section through the thymic lymphoma, from an adult dairy cow, showing the lobulated structure

Reproductive system – abortion, stillbirth, and congenital deformities

The most frequent diagnoses from abortion and stillbirth submissions made in the fourth quarter (Q4) of 2024, compared to Q4 in 2023, and Q4 for 2015 to 2024 inclusive, through

the Great Britain (England, Wales, and Scotland) scanning surveillance network, are illustrated in Table 3. These can be interrogated further using the interactive cattle disease surveillance dashboard which was launched in October 2017.

Table 3: Great Britain scanning surveillance 10 most frequent abortion and stillbirth submission diagnoses in Q4 of 2024, Q4 of 2023, and Q4 for 2015-2024

10 most frequent abortion diagnoses Q4 2024	10 most frequent abortion diagnoses Q4 2023	10 most frequent abortion diagnoses Q4 2015-2024
1. Fetopathy due to *Neospora* infection	1. Fetopathy due to *Salmonella* Dublin	1. Fetopathy due to *Salmonella* Dublin
2. Fetopathy due to *Trueperella pyogenes*	2. Fetopathy due to *Neospora* infection	2. Fetopathy due to *Neospora* infection
3. Fetopathy due to *Bacillus licheniformis*	3. Fetopathy due to *Bacillus licheniformis*	3. Fetopathy diagnosis not listed
4. Fetopathy due to *Salmonella* Dublin	4. Fetopathy due to fungi	4. Fetopathy due to *Trueperella pyogenes*
5. Fetopathy due to fungi	5. Fetopathy due to *Trueperella pyogenes*	5. Fetopathy due to fungi
6. Fetopathy diagnosis not listed	6. Fetopathy diagnosis not listed	6. Fetopathy due to *Bacillus licheniformis*
7. Fetopathy or stillbirth due to congenital abnormality	7. Fetopathy due to C*ampylobacter*	7. Fetopathy with BVD detected in the foetus
8. Fetopathy due to IBR/IPV	8 Fetopathy with BVD detected in the foetus	8. Fetopathy or stillbirth due to congenital abnormality
9. Fetopathy due to Listeria sp	9. Fetopathy or stillbirth due to congenital abnormality	9. Stillbirth due to dystocia
10. Stillbirth due to bradytocia	10. Fetopathy due to traumatocia	10. Fetopathy due to C*ampylobacter*

Stillbirth due to thyroid hyperplasia

Thyroid hyperplasia was diagnosed in a stillborn calf submitted to investigate ongoing abortion and stillbirth issues in a 300-cow dairy herd. An increased mortality rate was also

reported in preweaned calves aged two to four weeks of age. The gross findings in the submitted calf were of congestions around the head typical of dystocia. Assessment of the thyroid glands established the thyroid to calf weight ratio as 0.065%, with thyroid weight ratios greater than 0.03% considered to be abnormal. Histological assessment identified the thyroid tissue to be underdeveloped and hyperplastic, consistent with goitre. Maternal dietary iodine deficiency or (paradoxically) excess was proposed as a possible cause, as was exposure to goitrogens such as brassicas during gestation. Further investigation was to be undertaken.

Fetopathy with BVD detected in the foetus

A three-day-old Holstein heifer calf was described as having been shaky since birth and was suspected to be blind. It was unable to suckle and was euthanased when it failed to improve. Six similar calves had been culled in December 2023, all of which tested positive for bovine viral diarrhoea virus (BVDV). A further viraemic animal had been detected in early September 2024 and there had been six more affected calves born in the previous three weeks, all of which tested negative for BVDV. All were full term but smaller than average.

Postmortem examination of the submitted calf identified a slightly abnormal appearance to the caudal cerebellum. Histopathology described cerebellar dysplasia with aberrant placement of Purkinje cells, large neurones randomly placed within the cerebellar white matter, and hypercellularity of the molecular layer. PCR testing of spleen detected BVDV-1 RNA, confirming this calf to be persistently infected with cross-placental transmission of virus having occurred in the first four months of gestation. Slightly later infection during development of the immune system can also result in cerebellar damage, but affected calves are born antibody positive/virus negative. This scenario would explain the failure to detect BVDV in the other affected calves.

Congenital hypotrichosis in a Holstein Friesian calf

A Holstein calf was born with reduced hair cover (Figure 10) and an overshot jaw and, was subsequently found dead at 24 hours old. Skin samples were collected by the private veterinary surgeon for histological review. This found the cause of lesions to be follicular dysplasia (hypoplasia), consistent with both the lethal and viable forms of congenital hypotrichosis which have been described in Holstein Friesians and other breeds of cattle. The fact that this animal died shortly after birth was suggestive of the lethal form of hypotrichosis recognised in Holstein-Friesian, which is thought to have an autosomal recessive mode of inheritance.

Figure 10: Poor and 'fuzzy 'hair growth over the head, tail head and limbs of a Holstein calf with congenital hypotrichosis. Photos courtesy of John O'Mahony, Penbode Vets.

Mastitis

There were no significant trends for this quarter.

Centre of Expertise for Extensively Managed Livestock

The COEEML was developed by APHA to address potential surveillance gaps for extensively managed animals. Extensive management of livestock potentially makes regular or close inspection for disease detection more challenging. The Centre is based at the APHA Veterinary Investigation Centre in Carmarthen; however, it is a Great Britain-wide resource and forms part of the wider veterinary surveillance system operated by APHA. For more details, please see the COEEML pages on the Vet Gateway.

Antimicrobial use and resistance

The Veterinary Antibiotic Resistance Sales and Surveillance (UK-VARRS) Report 2023 has recently been published by the Veterinary Medicines Directorate (VMD): Veterinary Antimicrobial Resistance and Sales Surveillance 2023

This latest UK-VARSS report continues to document downward trends in sales of veterinary antibiotics in the UK. In addition, the latest RUMA Targets Task Force report can be found at: RUMA-TTF-Report-FINAL-published-November-19-2024.pdf

The Medicine Hub, a voluntary industry initiative, developed and managed by AHDB, was launched in 2021 and provides a central location for the collection of medicine data, including antibiotic use: Medicine Hub for dairy, beef and sheep farmers | AHDB

Chemical food safety

The latest Chemical Food Safety Reports can be found at: APHA chemical food safety reports (livestock)

Toxic conditions

Copper toxicity in four-month-old calves

Copper toxicity was diagnosed in a 4½-month-old dairy-cross beef calf, submitted to investigate a short history of respiratory signs, followed by death. The calf was from a finishing unit where calves from multiple herds arrived at approximately 130kg in weight. Shortly after arrival they were given access to grazing, 3kg concentrates (oats, barley, protein blend and mineral), and wheat straw. Extra copper supplementation was also given due to past concerns of low copper status on the farm. The calves received a bespoke trace element oral drench on arrival, a copper bolus (though the submitted calf had not yet received its bolus); and a high copper mineral mix (3.5kg/acre Cu) was applied to the pasture, which was reported to have clumped on the pasture surface. The gross postmortem findings were of jaundice, watery blood, and port-coloured urine. Biochemistry established significantly raised liver and kidney copper concentrations, confirming copper toxicity. The copper concentration in the liver did not exceed that requiring reporting to the Food Standards Agency. Over supplementation of calves from dairy origin is of concern in respect to the risk of copper intoxication or hepatopathy.

Bracken fern toxicity in a cow

A seven-year-old cow was submitted after becoming acutely dyspnoeic and ataxic before it died. It was one of a group of 80 grazing in the New Forest and was the ninth reported to have died. Postmortem examination revealed many ticks on the carcase, mild jaundice, and there was haemorrhagic scour around the anus. Widespread haemorrhages were present throughout the carcase (Figure 11) and a bracken (*Pteridium aquilinum*) frond was identified in the rumen content. Histopathology was undertaken on the bone marrow which identified depletion of cell precursors. This finding, together with evidence of exposure, indicated that bracken toxicity was the most likely cause of death. There was also evidence of a secondary septicaemia, a not uncommon sequel to the reduced or absent neutrophil count. It was advised to provide palatable roughage for the remainder of the group of animals and attempt to prevent access to the bracken.

Bracken contains several toxic moieties including ptaquiloside, kaempferol, and shikimic acid. Poisoning usually arises in cattle with insufficient grazing, such as when there is a drought, or when pasture grass is particularly lush and animals are seeking extra fibre, as

in early spring after turnout. Cases have also been described in cattle which have been housed with dried bracken used as bedding.

The diagnosis of bracken poisoning in live animals can be made by identifying clinical signs of a bleeding disorder, evidence of exposure to bracken, and haematological examination for thrombocytopenia and neutropenia. Ptaquilosides are carcinogenic, and hence the consumption of animals which are suspected to have had access to bracken are considered a possible risk to human health and, should not enter the food chain until after a withdrawal period of 15 days. Where poisoning arises in dairy cattle withholding milk for at least four days is recommended: (https://cot.food.gov.uk/sites/default/files/cot/cotstatementbracken200805.pdf).

Poisoning incidents by bracken and acorns/oak (*Quercus* species) are diagnosed more commonly in the autumn, while toxicity caused by ragwort (*Senecio jacobaea*) has a more widespread distribution through the year, as animals are more likely to ingest in stored forage than at pasture (Figure 12). Further details of these diagnoses are available at the APHA Vet Gateway: (https://public.tableau.com/app/profile/siu.apha/viz/CattleDashboard/Overview).

Figure 11: Widespread haemorrhages in a cow with bracken poisoning

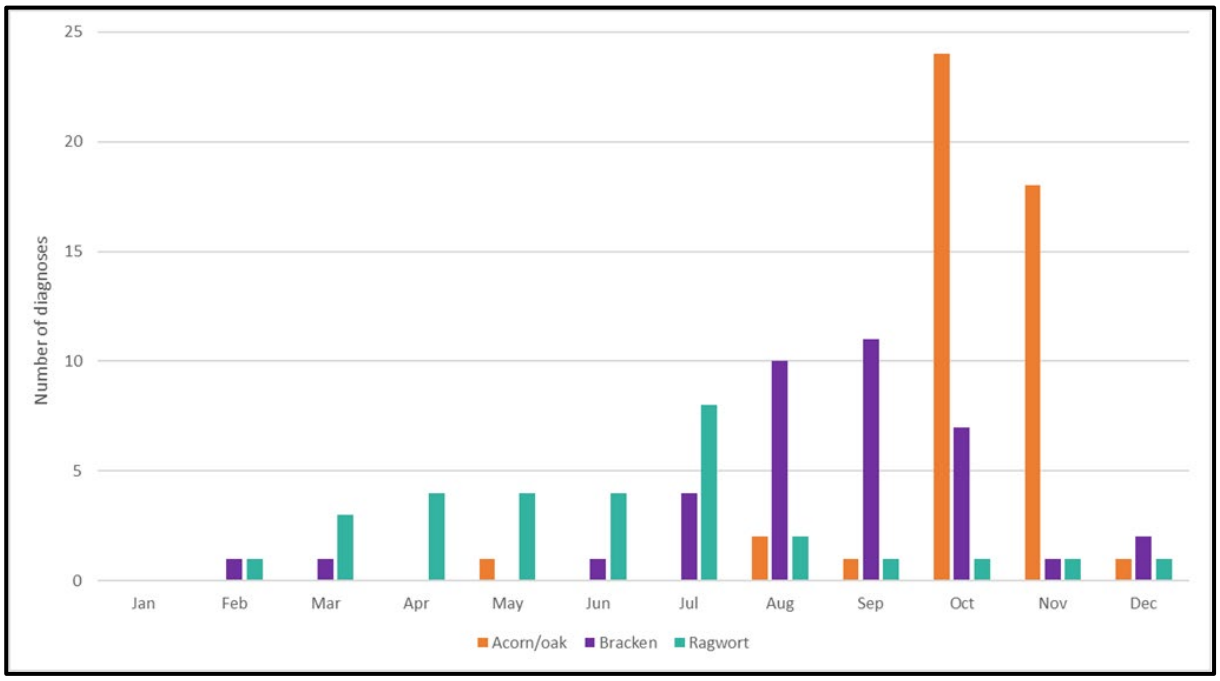

Figure 12: Seasonality of acorn/oak, bracken, and ragwort poisoning for 2008 to 2023

Horizon scanning

International Disease Monitoring (IDM) horizon-scanning activities monitor for major, notifiable, or new and re-emerging animal disease outbreaks worldwide. This is done to provide an early warning and to assess the risks they may pose to the United Kingdom (UK), particularly for those diseases which impact on animal health and welfare, international trade, public health, or wider society. IDM also assess the risk that animal diseases might come into the UK through the trade in animals or animal products (legal or illegal), through movements of wildlife, or through the movement of fomites and vectors such as insects which may carry infectious disease. These outbreak assessments are used to guide decisions how to manage or reduce the risks and are published on the web: Animal diseases: international and UK monitoring. Shown below is some of the outbreak assessment information and horizon scanning from Quarter 4 2024.

Bluetongue virus in Europe: in November, in Europe, BTV-3 was reported in Czech Republic (88), Denmark (296), France (7), Germany (11), Liechtenstein (1), Norway (12) and Spain (9). BTV-4 was reported in Cyprus (3). BTV-8 was reported in Greece (31). In Africa, BTV pending typing was reported in Libya (13). (WOAH data only). See also the map in Figure 12, which shows all the bluetongue virus reports on WOAH in Europe (except BTV-1). On the 11 October 2024, the Netherlands published reports for the first time detailing that BTV12 had been detected in 2 separate farms. BTV-12 has not been seen before in Northern Europe and the origin is unknown at this time (NVWA 2024c). There is no vaccine available for BTV-12 and the clinical picture is unclear. Further information can be found at: Bluetongue virus in Europe

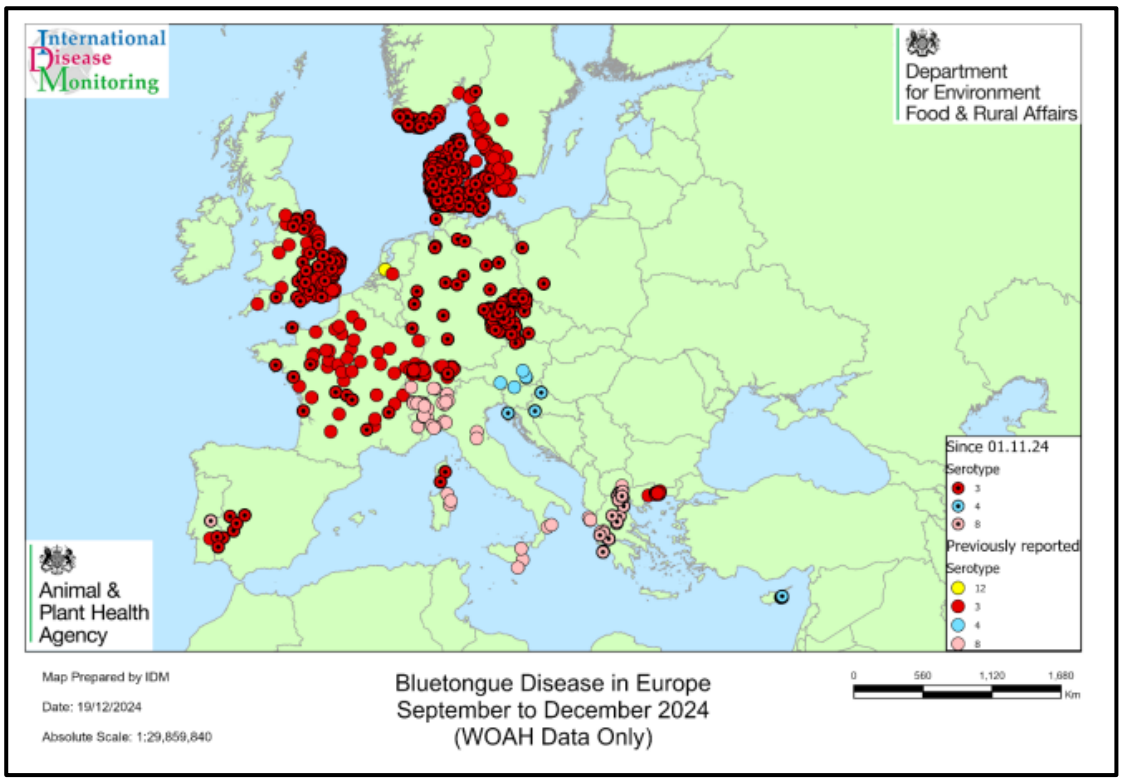

Figure 12: WOAH data for Bluetongue Disease in Europe from September to 17 December 2024

Epizootic Haemorrhagic Disease (EHD): France, Spain and Portugal reported outbreaks of EHD (serotype 8) in Q3 and Q4 2024. Epizootic haemorrhagic disease in Europe

Foot and Mouth Disease (FMD): in November 2024, outbreaks of FMD SAT 2 were reported in Algeria (6) and South Africa (3). Outbreaks of FMD type O were reported in China (1) and Palestine (2) (WOAH data only).

Influenza A (H5N1) of avian origin in domestic livestock in the USA

On 25 March 2024, the United States of America (USA) made an immediate notification to the World Organisation for Animal Health (WOAH) of an outbreak of influenza A of avian origin (H5N1) affecting dairy cattle in Texas. The outbreak strain, a high pathogenicity avian influenza (HPAI) virus strain, belonged to clade 2.3.4.4b, genotype B3.13. This genotype has never been detected outside of the Americas. New cases of this continued to be detected in different states in the USA during this quarter. Further information can be found here: Influenza A (H5N1) of avian origin in domestic livestock in the USA - GOV.UK

APHA publications of interest

Monthly APHA disease surveillance reports can be found at this link: APHA disease surveillance monthly reports - GOV.UK (www.gov.uk)

APHA focus articles in the Veterinary Record can be found at: APHA focus articles in the Veterinary Record - GOV.UK (www.gov.uk) including a recently published surveillance focus article on Nodular skin disease in cattle (wiley.com)

The 2023 edition of the *Salmonella* in animals and feed in Great Britain (previously called *Salmonella* in Livestock Production in GB) has been published and is now available here: Salmonella in animals and feed in Great Britain 2023

MASTIN A; Gubbins S; Ashby M; PAPADOPOULOU C; WADE C; Batten C (2023) BTV and EHDV – what's new and what do I need to know? Veterinary Practice: InFocus 4th October 2023. BTV and EHDV – what's new and what do I need to know? - Veterinary Practice (veterinary-practice.com)

OTTER A; SCHOCK A; PAYNE J (2023) A form of hepatogenous copper poisoning in fattening cattle associated with the ingestion of mouldy straw. Vet Record Case Reports 11 (2) 2592. A form of hepatogenous copper poisoning in fattening cattle associated with the ingestion of mouldy straw - Otter - 2023 - Veterinary Record Case Reports - Wiley Online Library

JEWELL N; SWINSON V; HAYMAN C; MARTINDALE L; BRZOZOWSKA A; Mitchell S (2023) Laboratory diagnosis of gastrointestinal nematodes in first-grazing season cattle. Veterinary Record 192 (9) 364-36 Laboratory diagnosis of gastrointestinal nematodes in first-grazing-season cattle - Jewell - 2023 - Veterinary Record - Wiley Online Library

OTTER A; BRZOZOWSKA A (2022) Pneumonia in adult cattle, *Veterinary Record 5/12 March 2022 191-193* Pneumonia in adult cattle (wiley.com)

SRUC-VS Surveillance Reports

October: Ovine haemonchosis deaths trigger parasite alert in north-east Scotland

November: Parasitic gastroenteritis a common finding in Scottish lambs in September

December: Rare case of malignant catarrhal fever in a goat

Statement regarding use of this material

This publication is available at:

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.