



VLA MONTHLY SCANNING SURVEILLANCE REPORT APRIL 2009

HIGHLIGHTS

- **Tenth outbreak of Psoroptic mange in cattle**
Further evidence that this parasitic disease is being transmitted between farms. The potential problems with effective therapy indicate that farmers need to consult their veterinarians before treating
- **Further cases of acute fasciolosis in sheep indicating continuing exposure to metacercariae on pasture**
The presence of acute disease indicates significant contamination of pasture in infected areas.
- **First cases of Nematodirus disease diagnosed in lambs and an alpaca**
Farmers should consider implementing their flock health plan by treating lambs at risk
- **Widespread reports of Streptococcal polyarthritis in lambs**
The incidence of this disease shows considerable variation between years. Many of these outbreaks occurred on well managed farms and in some cases where prophylactic treatment had been given.
- **Iron deficiency anaemia in piglets**
Two cases described were associated with failure to supplement the dietary iron intake of the rapidly growing piglets
- **Duck Virus Enteritis causing deaths in domestic ducks and wild waterfowl**
It is likely that the disease seen in domestic ducks was the result of contact with wild waterfowl
- **TB diagnosed in a Siamese cat**
*The causative organism was identified as *Mycobacterium bovis**

CATTLE

Reproductive diseases

Abortion

Bacillus licheniformis was diagnosed as the cause of abortion in three submissions to Carmarthen and two to Aberystwyth after culture from foetal stomach contents.

Thirsk also diagnosed a case involving a Limousin cross suckler calf which had been born alive two months prematurely. Necropsy revealed a pure profuse growth of *Bacillus licheniformis* from the foetal stomach contents. Histology on the lung revealed the presence of a fetal pneumonia consistent with an infection by *Bacillus licheniformis*.

Post-partum metritis

Langford diagnosed post calving endometritis as the cause of death in Friesian cross Holstein milking cows on three separate premises during the month. Two of the cows had calved with assistance four to five days previously. In one a purulent endometritis with accumulations of dark foul smelling fluid in the uterus was accompanied by the presence of "dirty grey" fluid and fibrin in the abdominal cavity. In the other no signs of acute peritonitis were seen but the liver was pale, tinged yellow and friable. *E. coli* was isolated in pure culture from heart blood, liver and lung of this cow. The third case involved a first calf heifer which had calved unassisted four weeks previously and had allegedly shown no clinical signs prior to death.

Alimentary Tract Diseases

BVD

An outbreak of acute BVD was diagnosed at Carmarthen in a very large 'flying' dairy herd where large numbers of freshly calved cows were sick with a pyrexia of approximately 40° C, sometimes with a nasal discharge. Animals recovered in 7 to 10 days and there were no deaths. The herd was vaccinated for IBR. Serology for BVD revealed a significant rise in BVD antibody Elisa for three out of five cows' sampled.

Fasciolosis

Loss of condition, scours, and sub-mandibular oedema in a 2½-year-old heifer from a group of 120 prompted the submission of blood and faeces samples to Luddington. Biochemistry revealed a severe hypoalbuminaemia (16.2 g/l; reference range is 27-39 g/l) and hugely raised Gamma Glutamyl Transferase (126 U/l; ref. range is 0-30 U/l @ 37°). The cow was anaemic and liver fluke eggs were detected in a faecal sample, consistent with a diagnosis of fasciolosis. It was recommended to treat the entire group with a flukicide.

Shrewsbury diagnosed the condition on 11 farms: in Denbighshire (4), Shropshire (3), Derbyshire (1), Staffordshire (1), Anglesey (1), Powys (1) and Cheshire (1). *Paramphistomum* species rumen fluke eggs were also detected in one submission.

Starcross also reported that fasciolosis continues to be prominent, with infection identified on 12 farms, including farms diagnosed with concurrent

diseases including: *Salmonella* Dublin; Johne's disease; *Paramphistomum cervi*; and parasitic gastroenteritis.

Traumatic reticuloperitonitis

Disease caused by the ingestion of wire was diagnosed by Sutton Bonnington in two cows found dead from the same dairy unit. The first, a three and half-year-old Holstein Friesian cow, was housed in a yard of 20 dry cows and was due to calve in six weeks time. At necropsy a two and a half cm thin wire was detected penetrating the right ventricle. The cause of death in this cow was associated with the penetration of the heart wall by a likely tyre wire that had caused exsanguination into the pericardial sac and likely cardiac tamponade. A wire of similar length was also detected within the reticulum of the other carcass submitted resulting in cranial abdominal peritonitis suggestive of wire penetration from the reticulum. Review of the use of tyres on clamped silage and the removal of any with wires exposed, along with consideration of the use of intra-ruminal magnets and/or magnets in the feed mixer were recommended.

Langford carried out a post-mortem of a 5 ½ year old Friesian cow which had been submitted with a history of acute onset dyspnoea and rapid development of subcutaneous emphysema. She was the second cow in the same group to show similar signs. The previous one having occurred six months ago. Necropsy revealed penetration and abscessation of the caudal thorax by a 3in tyre wire.

Respiratory Diseases

Mannheimia haemolytica

Penrith received a recently calved nine-year-old suckler cow for post-mortem examination. It was from a group of 50 which had developed severe nasal discharge, weakness and ataxia, and was said to be grunting and holding its head down before it died. A few other cows had shown similar signs around calving over the last few weeks. At necropsy there was conjunctivitis, reddening of tracheal mucosa and cranioventral consolidation of both lungs. Small white foci were present throughout the affected lung tissue and marked fibrinous pleurisy accompanied the lung changes. *Mannheimia haemolytica* was isolated from lung tissue, and no IBR, PI3 or RSV was identified by FAT, and BVD Antigen ELISA was negative.

Other Diseases

Psoroptic mange

Another case of Psoroptic mange in a suckler herd was diagnosed by Carmarthen (a total of 10 since October 2007). Sixteen out of a group of 39 cattle were showing visible signs. Veterinary advice was sought after there was no response to treatment and a rapid progression of signs. The skin lesions were along the back of the animals including the tailhead and there was a lot of scab formation. Treatment under the cascade, (with a 4% permethrin pour-on, three treatments at 2 weekly intervals) has been initiated to all animals in the group. A clinical improvement has been noted after the first treatment. It was advised to move the animals out of the infected housing and to check efficacy of treatment by submitting further samples.

Mastitis

A sudden increase in the incidence of clinical mastitis triggered the submission of seven milk samples to Luddington. Culture yielded *Streptococcus agalactiae* in four of the samples and *S.uberis* from one other. Subsequent enquiry revealed lack of dry cow therapy and other basic control methods

Congenital joint laxity and dwarfism

Shrewsbury diagnosed congenital joint laxity and dwarfism in a Charolais cross Blonde d'Aquitaine calf (figure1). It was the second affected calf born over a 24 hour period in a group of 90 sucklers, 40 of which had previously calved normally. The animal exhibited the typical abnormalities of shortening of limb bones and the neck with a rather barrel-shaped chest and pronounced over-extension of its fetlock joints. Tests for infectious causes were negative.

Figure 1.

Congenital Dwarfism in a Charolais cross Blonde d'Aquitaine calf



Ragwort poisoning

Langford diagnosed ragwort poisoning as the cause of death of three cattle fed silage containing a significant quantity of the plant. The silage had been made by a contractor on land where 25% was covered by ragwort.

SMALL RUMINANTS

Reproductive diseases

Out of 987 abortion submissions to VLA between January and March, 470 resulted in a diagnosis (48%). There were few surprises in the relative incidence of causes of abortion with *Chlamydophila abortus* and *Toxoplasma gondii* remaining the most common agents identified.

Yersinia pseudotuberculosis abortion was confirmed following isolation of the organism in a pure growth from the stomach contents, from a final trimester foetus by Aberystwyth. Two ewes out of a group of 40 had aborted, in a flock of 450 ewes. The placenta submitted with the foetus had some caseous-like deposits on isolated areas with normal cotyledons. The appearance of the placenta was grossly similar to some cases of enzootic abortion.

Border disease

Border disease was diagnosed by Aberystwyth as the cause of tremors in lambs from birth, weak lambs and in some cases stillborn lambs in a flock of hill ewes. Thirty out of a group of 280 speckle faced ewes had produced abnormal lambs. Necropsy of one affected lamb revealed visible cerebellar hypoplasia with the cerebellum almost half the size of a normal cerebellum (fig.3).

Penrith also diagnosed the disease in foetuses from a flock experiencing abortions and small live lambs with coarse hairy coats. Subsequent investigation revealed that the disease had been introduced by purchased ewes two years previously.

Figure 3.

Brain of a lamb affected by cerebellar hypoplasia (right) caused by Border Disease virus compared to normal brain (left)



Alimentary Tract Diseases

Lamb Dysentery

Newcastle diagnosed lamb dysentery in a 2-day-old lamb, one of 20 to have died with signs of abdominal swelling. Post-mortem examination revealed a significant amount of gas and blood stained fluid in the small intestine. The diagnosis was confirmed by Clostridial toxin ELISA. Very low serum gammaglobulin concentrations (0.7 ZST units, reference >20) indicated inadequate colostrum intake and consequent increased susceptibility to disease.

Enterotoxaemia

Pulpy kidney (*Clostridium perfringens* type D enterotoxaemia) was also diagnosed this month in both Carmarthen and Aberystwyth laboratories. In one case investigated by Carmarthen the disease was responsible for the death of a 4 week old lamb, the fifth to die out of a group of 400 without any signs of illness. Clostridial vaccination to the ewes had stopped two years previously. Typical signs of hydropericardium and herniation of the cerebellum through the foramen magnum were seen on examination and *Clostridium perfringens* epsilon toxin detected in the intestinal contents.

Pulpy kidney disease was also diagnosed by Penrith in 2-month-old lambs from a flock with an inadequate vaccination programme. The ewes were unvaccinated with the farmer relying on a single vaccination of lambs at 1-week-old to protect against clostridial disease.

Fasciolosis

Fasciolosis continued to be frequently diagnosed and reports from regional laboratories revealed the impact the disease could have on individual flocks.

Fasciolosis caused the death of a broken mouthed ewe examined at Carmarthen. Ten ewes had died out of a group of 50. They became lethargic and died within 2 or 3 days. They had been drenched for parasitic gastro-enteritis twice recently but no fluke treatment has been given. Large numbers of adult flukes were seen in the liver.

Acute and subacute fasciolosis was diagnosed in two dead ewes that were received at Aberystwyth towards the end of March. It was part of an investigation of sudden deaths, where 30 ewes had died since January out of a group of 300, in a flock totalling 1500 ewes. Immature fluke were found in the liver along with focal areas of necrosis in the liver parenchyma.

Luddington investigated a case in which twenty-seven ewes from a group of 107 were reported to have died after losing condition. Necropsy of an affected animal confirmed the presence of acute fasciolosis.

Penrith identified fluke eggs in monitoring samples taken from ewes which had been successfully treated with closantel/mebendazole two months previously. This finding indicated that infective metacercariae were present on the pasture over the winter adding to the evidence of continued exposure of animals at pasture in endemic areas.

Nematodirus disease

The first faecal samples with *Nematodirus battus* eggs were seen at the end of April at Carmarthen. The lambs were 4-6 week old lambs and 10 out of 150 had diarrhoea. Faecal egg counts ranged from 100 - 300 *Nematodirus battus* eggs per gram. However disease due to *Nematodirus battus* can

occur when counts are low, or negative, as immature worms cause disease. Last year's lambs were severely affected by *Nematodirus battus* on this holding, leading to contamination of pastures for this year's lambs. Large numbers of coccidial oocysts were also seen in some of the samples which may have been contributing to the signs seen.

Bury also reported nematodiosis in last few days of April. Sudden death was described in two, two-month-old lambs from a group of 79.

Coccidiosis

Coccidiosis was diagnosed by Bury in a group of six-week-old lambs which had not yet received creep feed which would normally contain an anticoccidial agent. The faecal coccidial oocysts count was 193,800 per gram of which 95% were the pathogenic species *Eimeria crandallis*. On another farm the only enteric pathogen identified in three-week-old scouring lambs was cryptosporidia. At a third farm rotavirus was detected in faeces from a two-week-old lamb. Five lambs had died with severe diarrhoea.

Other diseases

Streptococcal Polyarthritis

Polyarthritis caused by *Streptococcus dysgalactiae* was diagnosed by several laboratories. Carmarthen described an outbreak affecting seven lambs in a batch of eighty. Luddington reported two outbreaks in lambs aged 2-3 weeks. Both Thirsk and Starcross reported outbreaks of disease in lambs which had received prophylactic injections of antibiotic. In the case investigated by Starcross 10/550 lambs were affected.

Listeriosis

There were frequent reports of cases of listeriosis most of which were cases of encephalitis Penrith reporting a typical case presenting as a vague illness with circling over several days in ewes close to lambing. Silage was being fed in both flocks.

In contrast Leahurst diagnosed septicaemic listeriosis in a 14-day-old orphan lamb. The owner of a smallholding had acquired it 3 days earlier in thin condition and there were several other orphan lambs on the holding. This one became recumbent and unwilling to suckle and died. Necropsy revealed diffuse miliary cream to white speckling of the liver. Profuse and pure growth of *Listeria monocytogenes* was isolated from liver, lung and brain.

Ringworm

Winchester diagnosed ringworm from wool and scab sample received from sheep showing crusty skin lesions. Fungal culture yielded *Trichophyton verrucosum* which, although not common, is the ringworm species most often associated with sheep. No other aetiological agent was identified.

PIGS

Alimentary Tract Diseases

Three one to two-day-old piglets were submitted to Bury to investigate scouring in litters from all ages of sows and not responding to antibiotic treatment. Enteric colibacillosis was diagnosed with profuse growths of *E.coli*

serotype O149: K91, K88ac (Abbotstown strain) from the intestines. In one piglet the gammaglobulin concentration was 0.8 ZST units indicating a failure of colostrum antibody uptake, which its empty stomach suggests was due to a failure to ingest colostrum. In the two other piglets which had milk in their stomachs, gammaglobulin concentrations were >20 ZST units indicating that there was satisfactory colostrum antibody uptake.

Respiratory Diseases

Actinobacillus pleuropneumoniae

Actinobacillus pleuropneumoniae infection was confirmed as a component of respiratory disease in 10-week-old pigs over a two week period on a nursery unit rearing 1750 pigs to 12-weeks-old in tents containing 110 pigs each. Four hundred pigs were affected and 83 had died. Coughing and sudden deaths were reported. One dead pig was submitted to Bury and necropsy revealed purple consolidation of the caudal lung lobe and fibrous pericarditis, *Actinobacillus pleuropneumoniae* was isolated. No underlying mycoplasmal or viral disease was identified.

PRRS

Pigs were submitted to Bury from a 10,500 pig continuous nursery-finisher unit to investigate increased wasting and mortality post weaning. Disease due to *Actinobacillus pleuropneumoniae* had been a problem in finishers over the previous few months and active PRRS virus infection was also recently identified on the unit. Post mortem examination was undertaken on six seven-week-old pigs in poor body condition. In four pigs findings were very similar with a fibrinous polyserositis, suggestive of Glasser's disease, although no *Haemophilus parasuis* was isolated probably due to recent parenteral antibiotic treatment. In the other two pigs there was lower limb pathology, in one this was a large subcutaneous abscess and in the other there was osteomyelitis of the tuber calcaneus from which *Arcanobacterium pyogenes* was isolated. The spleens of three of the pigs were tested for PRRSV by PCR and all tested positive for European strain PRRS; the active PRRS virus infection was considered to be significant to the clinical problem on farm.

Other diseases

Glasser's Disease

Sutton Bonnington diagnosed *Haemophilus parasuis* was diagnosed as the cause of polyserositis in an eight-week-old pig from a litter in which 50% of the pigs developed mild scouring and wasting. The small breeder finisher unit frequently had experienced cases of wasting and scouring after weaning. This animal also had a mild ulcerative typhlocolitis, with faecal samples positive for brachyspira spp. by FAT. Culture of the faeces resulted in identification of *Brachyspira pilosicoli*.

Iron Deficiency

Sudden deaths in a group of well-grown six-week-old piglets lead to the submission of two animals to Winchester for post mortem examination. Profound anaemia was evident in both animals, and was confirmed histologically. Advice on iron supplementation was given.

Shrewsbury also investigated two outbreaks in one of which iron deficiency was diagnosed in four week old piglets presented with a history of fading and then dying. Low liver tissue iron concentrations were detected. Initial suspicions had been that the fading was due to coccidiosis but there was no evidence of enteric pathogens.

Langford reported a case in which four of a group of 12, six-week old piglets had shown diarrhoea, inappetence and depression for a week. All four died following a brief period of respiratory distress. Necropsy revealed findings consistent with piglet anaemia. No supplementary iron was given.

BIRDS

Commercial layers

Parasitic enteritis

A problem of birds not coming into lay was investigated. Birds were transferred to the premises at 17 weeks of age but had not adequately come into lay. This was not highlighted until the birds were 37 weeks of age. Three birds were submitted and one had a heavy endoparasite infestation of *Ascarid* and *Heterakis* species and was in poor bodily condition. This bird had an inactive ovary. A further bird had an ulcerative proventriculitis and louse infestations were also detected. One of the other birds was in lay with a shelled egg in the lower oviduct and the third bird had only moderately sized sparse follicles on the ovary. No evidence of spirochaetal involvement was detected and management factors were thought to be possibly involved along with endoparasite infestation.

Erysipelas

Acute Erysipelas was the diagnosis in a flock of 12000, 50 week-old free range layers with a history of significantly increased mortality from around 40 weeks. Egg production has remained good. Heavy pure growths of *Erysipelothrix rhusiopathiae* were obtained on culture of liver and spleen from septicaemic carcasses. A smaller flock of identical birds in another house on the farm have not been affected.

Broiler chickens

Fungal pneumonia was diagnosed in a flock of 29 day old broilers submitted with a history of stunting and abnormal vocalisation. Nodular lesions in the lower trachea/syrinx, lungs and thoracic air sacs were confirmed histopathologically as chronic fungal granulomas with septate branching fungal hyphae within the lesions. Fungal cultures produced good growths of *Aspergillus versicolor*. The bedding (sawdust) was said to be dry and in good condition.

Game birds

Poor egg production was described in a breeding flock of approximately 170 pheasants. Post mortem examination of four birds showed a severe nephropathy associated with urate deposits over the pericardium and the liver (visceral gout). Histology of the kidney showed a severe nephritis varying from acute granulocytic tubulonephritis to a chronic granulomatous nephritis. Pheasant coronavirus infection was suspected.

Ducks and Geese

Three out of 20 backyard ducks died and the affected birds were either Muscovy or mixed breed ducks. An adult female Muscovy duck carcass was submitted for post mortem examination. Watery blood stained liquid was present in the cloaca and there was necrosis of the pharynx, oesophagus and cloaca. The liver was enlarged and reddened with multifocal pinpoint haemorrhages. Histological examination of the liver showed random foci of hepatic necrosis associated with intranuclear inclusions in hepatocyte and bile duct epithelium nuclei. The oesophagus showed an ulcerative oesophagitis with both intranuclear and intracytoplasmic inclusions. The findings were consistent with duck virus enteritis. The diagnosis of the infection in wildlife (see below) suggests this as a possible source of infection.

MISCELLANEOUS SPECIES

Reindeer

Two Reindeer, which died within one month of each other on the same premises, were submitted to Newcastle for post-mortem examination. Clinical signs in both animals included acute onset inappetence, pyrexia and incoordination. Gross post-mortem examination of the first animal was unremarkable although examination of the second animal revealed intense congestion and necrosis of the caecal mucosa (see figure 2), subepicardial petechiation and subendocardial haemorrhage. Detection of OvHV-2 DNA in samples from both animals by PCR confirmed the diagnosis of malignant catarrhal fever. The animals were kept on an open farm in close proximity to sheep.

Alpaca

A 10-year-old alpaca hembra was found dead the day after she had been reluctant to join the group of 25 adults to eat the daily supplement of alpaca pellets and had passed faeces similar to a cow pat. Despite having been wormed 2 or 3 times a year, most recently about 5 weeks before the death, when she had shown a similar temporary lack of appetite, significant burdens of *Trichostrongylus axei* and *Nematodirus battus* worms were found at necropsy, suggesting that contamination of the pasture was considerable. Histopathology confirmed the presence of chronic plasmacytic and granulocytic enteritis consistent with nematode worm damage.

Luddington examined viscera from an adult alpaca that had died after showing signs of ill thrift and malaise. Four to eight others in the herd of 19 had shown similar clinical signs. A field post-mortem revealed a high Trichostrongyle-type worm burden and caseous masses in spleen, liver and the mesentery. Mycobacterial culture of the lesions yielded *Mycobacterium microti*, spoligotype 34. This organism is commonly associated with rodents.

Domestic Cat

A sample of lung was received from a Siamese cat that had first presented at the veterinary surgery two weeks' previously with enlarged mandibular lymph nodes and a change in vocalization. Over the next two weeks, the cat became tachypnoeic with increased lung sounds and radiography revealed diffuse miliary lesions in the lungs. On gross examination of the lung sample, pale coalescing, gritty foci were present and acid-fast organisms were seen

on a ZN stain. *Mycobacterium bovis* spoligotype 9 was subsequently isolated.

WILDLIFE

Duck Virus Enteritis

The death of swan in a zoological collection lead to its submission to Winchester for post mortem examination. Findings were of a watery gut content with diphtheritic areas present on the mucosa of the proximal small intestine. Virus isolation confirmed the presence of Duck Virus Enteritis (DVE).

Shrewsbury diagnosed Duck Virus Enteritis in a Canada goose which had been found dead on a small lake. It had been in good bodily condition but with minimal food material in the intestinal tract. Histopathology suggested the possibility of viral infection and Duck Virus Enteritis herpes virus was subsequently isolated from tissues.

Lead Poisoning in Swans

Four swans were reported to have died on the same stretch of river over the previous six months. Post mortem examination of one showed marked distension of the oesophagus with green liquid and ingested food. Further undigested food was present in the proximal small intestine with sloughing of the mucosa and mucosal casts. Although *Clostridium perfringens* was isolated following anaerobic culture no toxins were identified by ELISA testing. However, lead assay of the kidney revealed a level of 2,963 mmol/kg DM which was considered to be well above the normal background level for waterfowl and strongly suggested lead poisoning as the cause of death.