



## VLA MONTHLY SCANNING SURVEILLANCE REPORT AUGUST 2009

### Highlights

- **Feeding mouldy sweet potatoes causes the death of four beef finishers** – *Another case which demonstrates the need for care when feeding by products to cattle.*
- **Cases of babesiosis in cattle associated with increased tick activity**
- **Haemonchosis causing death in sheep and alpaca** – *Haemonchosis in sheep is becoming a common diagnosis and is often associated with a history of sudden death as the early signs may not be recognised by flock owners.*
- **Closantel toxicity causes the death of four lambs** – *This episode was associated with accidental overdose with a licensed product. The withdrawal period associated with the product was considered sufficient to protect the human food chain. VMD were alerted*
- **Salmonella Cholerasuis infection in a young gilt** – *Septicaemia caused by the organism can mimic classical swine fever*

# CATTLE

## ***Reproductive diseases***

### **Abortion**

Penrith diagnosed abortion due to *E.coli* and concurrent persistent infection with BVD virus following examination of a foetus submitted from a farm where five cows had aborted at six-months gestation in the previous three months.

*Bacillus licheniformis* was diagnosed by Aberystwyth as the cause of third trimester abortion in a beef-suckler heifer, where two out of a group of 22 in a herd of 210, had aborted within a 10 day period. The foetus and placenta proved unremarkable on gross examination; however, a pure heavy growth of *Bacillus licheniformis* isolated from the foetal stomach contents confirmed the diagnosis.

Shrewsbury identified further cases of *Salmonella* Montevideo infection in Cheshire dairy herds. Several infected herds having been identified in the area in the last few months. The most recent cases were a third trimester abortion in a herd of 620 animals and a diarrhoeic milking cow in a herd of 450. Leahurst also diagnosed the same organism as a cause of abortion in a 210 cow dairy herd. The organism was isolated from one set of twin foetuses submitted for necropsy and histopathological evidence suggested its involvement in ten previous abortions occurring over a 12 month period.

### **Infertility**

Reproductive problems in a group of 100 Holstein dairy cows triggered the submission of bloods to Luddington for a metabolic profile. Four of the six cows sampled showed mild to moderately elevated  $\beta$ -hydroxy butyrate levels and glucose was below the reference range in 5 out of 6 cows. These results indicate energy deficiency and a review of the fresh cow ration and regular body condition scoring was advised.

## ***Alimentary tract diseases***

### **Coli enteritis**

Carmarthen diagnosed diarrhoea due to K99 positive *E.coli* in a five day old Friesian Holstein calf. It was the fourth calf to die in a group of six calves born in a two week period. The calf was found to have adequate colostral antibody.

### **Fasciolosis**

Cumulative figures for the year to date indicate that the number of diagnoses at the Carmarthen laboratory from January to August 2009 was more than twice that in the equivalent period in 2008. One case involved a 12 year old Charolais beef-suckler cow with diarrhoea and weight loss in which both *Fasciola* and *Paramphistomum* eggs were found in a faecal sample

Langford also diagnosed nine incidents of Fasciolosis

### **Black Disease**

Black disease was diagnosed by Carmarthen in a 21 month old Holstein Friesian heifer which was found dead and was one of a group of eight running with a bull, at grass. Necropsy revealed large numbers of adult fluke in the bile ducts and a necrotic pale lesion 4-5 cm in diameter typical of black

disease in the liver. There were also subendocardial haemorrhages in the left ventricle of the heart, which is also a feature of black disease

### **Traumatic reticulitis**

The carcase of a 6 year old dairy cow was euthanased and submitted to Preston for necropsy to investigate marked condition loss. Reticuloperitonitis was confirmed, with the reticulum adherent to both the liver and the diaphragm. Within the reticulum, a 9cm long nail, the blades of a short pair of scissors and various small pieces of unidentifiable metal were found. Several large, 2-3cm diameter, cratered, ulcers were present in the abomasal mucosa near the pylorus.

### **Coccidiosis**

Winchester investigated an outbreak of diarrhoea affecting seven-month-old calves that had recently been turned out to grass where a number of animals subsequently died. Examination of faecal samples gave coccidial oocyst counts of 1 million to 43 million oocysts per gram. Coccidial speciation undertaken identified them to be 100% *Eimeria alabamensis*. This coccidial species is associated with scour in calves and yearlings at grass and may also occur in older cattle.

### **Jejunal haemorrhage syndrome**

The carcase of one three-year-old pedigree Belgian Blue stock bull was submitted to Thirsk for post-mortem examination after the animal died following a short illness lasting approximately 36 hours. The bull had been purchased in May from a commercial sale and was turned out with some cows, having been allowed to acclimatise to its new surroundings for two weeks. The bull proceeded to serve the cows successfully and uneventfully until 36 hours prior to its submission, when it presented with acute onset lethargy and malaise progressing to recumbency. At post-mortem examination the most striking feature was a region of mid-jejunum, approximately 70cm in length, which contained one large blood clot which was dark purple/black in colour throughout the entire length of this region in the lumen of the jejunum. A diagnosis of jejunal haemorrhage syndrome was made, on the basis of the gross post-mortem findings. This is a sporadic and unpredictable syndrome affecting cattle of all ages and types which was described by Abutarbush and Radostits (Canadian Veterinary Journal 2009, 46, 711-715) In this case, *Clostridium perfringens* type A was isolated (and identified on the basis of toxin production *in vitro*), although jejunal contents themselves were negative for all toxins.

## ***Respiratory Diseases***

### **IBR**

Preston diagnosed IBR infection in a dairy herd following demonstration of seroconversion in four clinically affected animals and demonstration of virus by FAT on an oculo–nasal swab collected from an acute case of milk drop and pyrexia.

### **Lungworm (Dictyocaulosis)**

Patent lungworm infection was diagnosed on two occasions by Preston following examination of faecal samples. In one episode a significant

trichostrongyle burden was also demonstrated in the submitted samples, confirming a need for more effective endoparasite control.

Shrewsbury also diagnosed lungworm infestation by identification of larvae in a composite faeces sample from a Cheshire herd of 200 adult milking cows, of which at least 50 were reported to be coughing and producing reduced milk yields. In another case severe lungworm infestation was diagnosed post mortem in a 9 year old cow, the seventh to die in an organic herd of around 100 milking animals.

## ***Nervous Diseases***

### **Sciatic neuropathy**

A 5-year-old cow was submitted to Penrith for post-mortem examination to investigate problems of cows developing generalised weakness of the back legs progressing to recumbency. There had been four cases in the herd in the last six months. The cow submitted had calved in February and had been milking adequately. The cow became recumbent 24 hours prior to death, but the farmer noticed knuckling of the hind limbs and tail flaccidity prior to this. Histological examinations revealed an acute bilateral segmental sciatic neuropathy, most likely related to trauma, either from bulling or from cubicle design.

### ***Mastitis***

*Mycoplasma bovis* and *Mycoplasma alkalescens* were confirmed by DGGE in a milk sample from a cow which failed to respond to antibiotic treatment.

*Nocardia asteroides* was cultured from two milk samples from the same farm. *Serratia liquefaciens* was isolated from a mastitic sample from an 8-year-old Holstein cow.

*Klebsiella pneumoniae* sub sp *pneumoniae* was isolated in a sparse pure growth from an outbreak of mastitis.

## ***Other Diseases***

### **Sweet Potato Poisoning**

Mouldy sweet potato toxicity caused the death of several animals in a group of housed beef finisher animals investigated by Sutton Bonnington. The fourth animal to die was found in the evening prior to submission, breathless and foaming at the mouth. It died shortly afterwards. The group was fed waste obtained from a market that contained material such as mangoes, peppers, butternut squash and sweet potatoes. At necropsy there was anterior-dependant firm bilateral lilac coloured consolidation that extended into the cut surface affecting 100% of the cranial and 50% of the middle lung lobes. The remainder of the lung had extensive and marked interlobular emphysema and oedema. Histopathology confirmed an atypical interstitial pneumonia characterised by marked type II pneumocyte hyperplasia and hyaline membrane formation.

### **Babesiosis (Red water fever)**

Starcross investigated a case in which clinical signs of haemoglobinuria were seen in an adult dairy cow and haematological examination of a blood smear identified RBC inclusions consistent with Babesia. In another case an adult South Devon bull was submitted following its sudden death. Post mortem

found attached adult ticks in the inguinal region, the mucous membranes were noted to be extremely pale and the blood watery. Other significant findings included an excess of bloody fluid in the abdominal cavity and pericardial sac, very dry faeces in the rectum, lung emphysema, a hugely enlarged spleen, dark/black kidneys and dark discoloured urine. The gross pathology, including the presence of ticks, was entirely consistent with acute redwater fever.

Carmarthen also diagnosed babesiosis in two Friesian Holstein cows. Six, out of a herd of 70, were affected with haemoglobinuria, and milk drop. The cows were anaemic (PCV 0.13 and 0.17 l/l - normal range 0.24-0.46 l/l) and typical *Babesia* spp. were seen on blood smears from the two cows tested. The cows had recently been turned onto a new field next to a river but no ticks had been seen.

## SMALL RUMINANTS

### ***Alimentary tract diseases***

#### **Parasitic gastroenteritis**

Luddington remarked that parasitic gastro-enteritis had been a problem for many farmers in August. In one case investigated diarrhoea and pyrexia were observed over several weeks in a group of six five-month-old lambs, one of which died. 4,700 *Trichostrongyle* eggs per gram were present in a faecal sample submitted.

Parasitic gastroenteritis and selenium deficiency were diagnosed in a five month-old lamb submitted to VLA Carmarthen to investigate sudden-onset diarrhoea and death in a group of 250 lambs. Twelve of the group had died and 125 were showing clinical signs of diarrhoea and weight loss. They had been wormed two months previously with ivermectin, 70,600 *Trichostrongylus* species worms and 22,600 *Cooperia curticei* were counted in the small intestine.

Haemonchosis was diagnosed in an adult lowland ewe submitted to Preston. Four sheep in a group of 14 ewes and 21 lambs had lost condition over the previous 2 weeks, and three had died. The flock had not been wormed since lambing until mid August, two weeks prior to submission. Mucous membranes were extremely pale.

Winchester also diagnosed a case following necropsy of a four to five-month-old lamb, the second to die in three days in a group of 400 lambs. The animal was severely anaemic and a very heavy burden of 42,300 worms, principally *Haemonchus* sp., were demonstrated in the abomasal contents.

Shrewsbury diagnosed a case in a six-year-old ewe which was found dead without any premonitory signs. Post mortem findings revealed the presence of anaemia and hypoproteinaemia, as suggested by subcutaneous submandibular oedema (bottle jaw) and effusions into the serosal cavities. Thirsk diagnosed the condition as the cause of death of eighteen four-month-old lambs belonging to a flock of 128, died within a six-day period. A total parasitic nematode count revealed heavy worm burdens with 30,600 adult and immature worms (80% *Haemonchus contortus*) present within the abomasum alone.

## Enterotoxaemia

Enterotoxaemia in lambs was frequently reported during the month. Langford investigated sudden deaths of well grown four-month old lambs. Necropsy revealed excess pericardial fluid and fibrin clots together with soft friable kidneys and the demonstration of *Clostridium perfringens* epsilon toxin in the intestinal contents confirming enterotoxaemia ( Pulpy Kidney Disease).

## Other diseases

### **Bibersteinia trehalosi septicaemia**

Carmarthen diagnosed *Bibersteinia trehalosi* septicaemia in three lambs aged six months. Some of the group had diarrhoea and were in poorer condition than expected. The lambs had been scanned for assessment of confirmation on one day and treated with albendazole at the fluke and worm dose over the next two days. Five lambs died over the next five days, usually showing signs of dysphagia, drooling and green nasal discharge prior to death. The history was suggestive of a dosing gun injury but at necropsy, all three lambs showed ulceration of the tongue and necrosis of the pharyngeal mucosa in front of the larynx and the proximal oesophagus consistent with *Bibersteinia trehalosi* septicaemia.

**Figure 1**  
**Pharyngeal lesions associated with Bibersteinia Trehalosi infection**



## Nervous Diseases

### **Closantel toxicity**

Three Kerry hill lambs from a group of 200 were presented for post-mortem examination. They had been weaned, treated with a combination product (Closantel and Mebendazole) together with alphacypermethrin three days

previously. Within 48 hours four lambs showed signs of opisthotonus and appeared blind. Despite treatment with antibiotics and Vitamin B12, three of the lambs died overnight. A further 12 were affected the following morning.

Post-mortem examination was unremarkable apart from the nervous system. The brains of lambs 1 and 2 showed slight swelling of the gyri and sulci. There was generalised reddening of the brain of lamb 3. Examination of the brains under UV light did not reveal any autofluorescence. Lead levels were tested in kidney tissue and found to be at background levels.

Histopathology of the brain and spinal cord of lambs 1 and 2 showed marked subpial / subependymal leucoencephalomyelopathy characterised by rarefaction of myelin. This lesion was also present in perivascular locations particularly in the cerebellar roof, optic tract/radiation, corpus callosum and fornix and was consistent with descriptions of closantel poisoning.

On further communication with the referring veterinary surgeon it was revealed that some of the lambs had received up to five times the recommended dose of combination wormer. The incident was reported to the VMD as a suspected adverse reaction. A risk assessment indicated no further action was required to protect the food chain since the animals were already covered by the 42 day withdrawal period required by the data sheet.

### **Border disease**

Penrith diagnosed Border disease virus infection in a 3-month-old Mule lamb that had been diarrhoeic for five days prior to death. There had been four deaths in the flock of 300 lambs. Gross post-mortem examination had been unremarkable. The diagnosis was made on examination of the brain, which showed characteristic changes. A late stage bacterial septicaemia was also seen on histological examination.

## **PIGS**

### ***Alimentary tract diseases***

#### **Clostridial enteritis**

Approximately 20% of neonatal pigs from a 180-sow breeder/finisher unit developed diarrhoea between one and four days of age. The diarrhoea was unresponsive to antibiotics but only a low group mortality was reported. Some recovered animals remained ill-thriven. Two live pigs were submitted to Thirsk for necropsy, both of which exhibited yellow faecal staining of the hindquarters. Post-mortem examination revealed mild reddening of jejunal serosa, with yellow frothy contents within the ileum which became voluminous, bubbly and bright yellow in the caecum and colon. The mesentery of the spiral colon of one pig showed marked oedema. Histopathological examination of the small intestine revealed severe villous atrophy, stunting and fusion with the ileum being particularly severely affected. Gram-positive bacilli were identifiable on gram-stained sections closely associated with surface enterocytes, confirming clostridial enteritis. Clostridial vaccination was recommended, in conjunction with increased attention to hygiene in the farrowing house.

#### **Swine Dysentery**

Six faecal samples were submitted to Thirsk for confirmation of swine dysentery in 11 to 12-week-old grower pigs. 60 animals were in the affected group and all were reported to be under-performing with a mucohaemorrhagic

diarrhoea. *Brachyspira hyodysenteriae* was identified by PCR. *Salmonella* London (a group E *Salmonella*) was also isolated from pooled samples.

## ***Respiratory Diseases***

### **PRRS and Strep Suis**

Bury diagnosed concurrent PRRS and *Streptococcus suis* infections as a cause of coughing, wasting, lameness and deaths in eight-week-old weaners from a single source on an all-in, all-out indoor nursery finisher. Approximately 55 of 550 pigs were affected with 10 deaths since the start of the problem a week earlier. Pigs had been vaccinated for *Mycoplasma hyopneumoniae* and sows received PCV2 vaccination.

### ***Other diseases***

#### **Salmonella Cholerasuis**

Thirsk isolated *Salmonella* Cholerasuis var Kunzendorf from a six-month-old gilt that died suddenly. The gilt was from a batch of pigs that was delivered to the unit two to three weeks previously. This *Salmonella* was a group C<sub>1</sub> and is currently a rare isolate in the UK with only six cultures from only four holdings having been reported in pigs since 1999.

#### **Staphylococcal arthritis**

Bury investigated lameness affecting 10 to 15% of piglets in farrowing houses from around 14 days of age, some of which never recovered completely following antibiotic treatment. Four live pigs were submitted with chronic arthritis mainly affecting hock and elbow joints. *Staphylococcus hyicus* was isolated in sparse but pure growth from three affected joints. There was no evidence of greasy pig disease in the submitted pigs, although two of the four had skin abrasions over the cranial aspects of the carpal joints. No other significant bacteria were isolated from the joints and no *Mycoplasma* species were identified. Further submission of untreated early cases was recommended to investigate further, and to determine whether *Staphylococcus hyicus* infection was a consistent finding.

## **BIRDS**

### ***Commercial Layers and Layer Breeders***

#### **Predator attack**

A problem of poor eggshell pigmentation affecting 25% of the egg production in a flock of 46 week old free range layers was thought to be related to predator attacks. There had been recent losses to foxes and buzzards. Examination of recent deaths revealed injuries consistent with predation. In the absence of disease, stress is one of the most important factors affecting the intensity of brown shell coloration (The release of adrenaline in stress situations may cause a delay in oviposition and an arrest of cuticular pigment deposition resulting in an increased proportion of poorly pigmented and whitish eggshells). It was reported later on that the birds had started to produce normal brown coloured eggs once the problem with predatory attacks was resolved.

## **Mycoplasmosis**

Sutton Bonnington investigated an outbreak of ocular discharge and coughing affecting 132 Orpington chickens. A single carcass was presented at Sutton Bonnington for necropsy which revealed significant thickening of the air sacs together with purulent fluid and white plaques. The lungs were dark red with white foci present along the dorsal midline aspect together with a pericardial effusion. The lesions were suggestive of mycoplasmosis. Subsequent DDGE testing of lung tissue demonstrated the presence of *Mycoplasma iners* an organism of uncertain pathogenicity which has been previously isolated from the respiratory tract of chickens, turkeys, pheasants and partridges.

## **Broilers and Broiler Breeders**

### **Spiking Mortality Syndrome**

A case of spiking mortality syndrome (probable hypoglycaemia) was suspected to be the cause of a sharp and transient increase in mortality in a flock of 19 day old broilers. Post-mortem examination findings included congested subcutaneous fat and livers, pale spleens with blood splashes and absence of food in the upper digestive tract. Histological examination of fat stained sections (Oil red O) revealed numerous lipid droplets in renal tubular epithelium and myocardial cells, supporting the possibility of a metabolic problem e.g. hypoglycaemia leading to the mobilisation of fat stores as an alternative energy source. However a definitive diagnosis for this condition depends on the demonstration of blood glucose levels below 150mg/dl.

## **Turkeys**

### **Blackhead**

Hepatic "target" lesions typical of Blackhead were seen in necropsy specimens from a small flock of 300, 10 week old poults with a history of increased mortality. Post mortem examination revealed multiple random "target" lesions on the liver surface and throughout its substance. The mucosa of the caecae had discreet raised rounded nodules. Histological examination confirmed histomoniasis.

### **Rickets**

Listlessness and reluctance to stand in a group of six-week-old turkey poults was investigated by Bury. There had been 70 deaths in a group of 325. Birds were fed a home-mixed organic feed including barley, wheat, peas and maize. Three submitted birds showed enlargement of the ends of the long bones, in particular the upper tibia and upper metatarsi. Bones were also easily fractured. Histology showed abnormalities of the growth plate suggestive of a calcium/vitamin D deficiency rickets.

## **Backyard Flocks**

### **Mite Infestation**

There were numerous reports of mite infestations causing losses in backyard flocks. Shrewsbury investigated a case in which 10 out of a group of 16 free-range backyard hens were reported to have died following a period of intermittent malaise and lethargy. The birds were approximately 15 months old and one live affected hen was submitted. It was thin, weak and reluctant to move, with a yellow discolouration to the skin. Many mites were visible on

the skin. The mites were identified as Northern Fowl Mite and further discussion with the owner suggested red mites were also likely to be present as many mites were visible in the house and bedding. The owner also had subsequently found mites on himself which were causing pruritus. He was advised to seek medical attention.

### ***Ducks and Geese***

Increased mortality (10/2000) in a group of 6 week old ducks being reared for meat was investigated by Preston. Clinical signs observed prior to death included dyspnoea (panting/mouth breathing) and recumbency. Necropsy of two birds revealed airsacculitis associated with *Aspergillus fumigatus* in one bird (the birds were bedded on chopped straw which may have been a source of spores). In the second bird there was evidence of caseous airsacculitis, fibrinous pericarditis and pneumonia. Organisms recovered from this bird were identified as *Riemerella anatipestifer* – a frequent cause of septicaemia pericarditis, perihepatitis and airsacculitis in ducks

### ***Gamebirds***

#### **Pheasants**

Deterioration of body condition and ill-thrift in a flock of 3500, 8 week old birds was attributed to a combination of failure to find food and chronic infection with *Spironucleus(Hexamita)sp.* Post-mortem examination revealed dehydration and loss of condition and motile protozoa consistent with *Spironucleus sp.* were seen in wet smears. Histological examination revealed no significant coccidial infection and confirmed protozoa in the intestinal crypts of the mid-gut and ileum consistent with *Spironucleus sp.*

## **MISCELLANEOUS SPECIES**

### **Haemonchosis in Alpaca**

Over a 2 week period 8 adult alpacas developed severe anaemia in the periparturient period, and six died shortly after giving birth. Affected animals showed marked respiratory distress terminally, but no other clinical signs were evident. The crias born were unaffected, and the problem appeared to be linked only to this group. Post mortem examination confirmed the severe anaemia described clinically, (as did haematological profiles in live alpacas), with marked pulmonary oedema. Necropsy revealed large numbers of *Haemonchus contortus* in C3.

### **Kyphosis in an Alpaca**

A thirteen-month-old alpaca with a history of chronic ill thrift was found to have marked spinal curvature in the thoracic region and various decreased neurological reflexes, wide-based stance and slight ataxia. Kyphosis of T5-T6 with compression of the spinal cord was confirmed on radiography and post mortem examination at RVC .

**Figure 2**  
**Kyphosis in an Alpaca showing deformity of spinal column at T5 -T6**



## **WILDLIFE**

A red squirrel (*Sciurus vulgaris*) was submitted to Penrith from the North of England which was found to have a subacute purulent necrotising ulcerative dermatitis caused by *Staphylococcus aureus*

Two other deaths caused by trauma, one a road collision, the second a predator attack were also diagnosed.

Several water voles (*Arvicola terrestris*) were submitted from a captive breeding establishment from which voles will be used for release, under a government licence. In one of the animals mild pneumonia was seen although causative pathogens were not identified. In the second animal there was evidence of a fungal infection of the stomach caused by *Candida albicans*. There was also a trichuris worm infestation