

Northern Ireland Disease Surveillance Report, JANUARY to MARCH 2013

- *Mannheimia haemolytica* in a six-week-old calf
- Accidental formalin poisoning in calves during a routine TB test
- Epidermolysis bullosa in a three-day-old calf
- Further cases of bovine neonatal pancytopenia

These are among matters discussed in the Northern Ireland animal disease surveillance quarterly report for January to March 2013

Cattle

Respiratory diseases

Respiratory disease was identified in 98 cattle postmortem submissions between January and March 2013. The most common pathogens identified included *Mannheimia haemolytica* (21 cases), *Pasteurella multocida* (18 cases), *Mycoplasma bovis* (13 cases), *Trueperella* (formerly *Arcanobacterium*) *pyogenes* (11 cases) and infectious bovine rhinotracheitis (five cases).

A six-week-old calf had a reported history of being stiff on its hindlegs for three to four days, but otherwise was bright and alert. There was no report of any respiratory signs in this animal nor in any of its cohort. It was subsequently euthanased after being found collapsed. Grossly, at post-mortem examination, there was an extensive fibrinous pleuritis and pericarditis from which *M. haemolytica* was isolated in profuse culture (Fig 1).



Figure 1

Fibrinous pleuritis due to *Mannheimia haemolytica* in a six-week old calf

Alimentary diseases

BVD/mucosal disease

Of 5086 blood samples that were tested for bovine viral diarrhoea virus (BVDV) by virus isolation or ELISA antigen capture, 345 (6.8 per cent) were positive. In addition, six of 511 (1.2 per cent) submitted tissues and nasal mucus samples were positive by immunofluorescence. Three cases of mucosal disease were confirmed at postmortem examination during this period.

Neonatal enteritis

The pathogens identified in neonatal bovine faecal samples during the quarter are shown in Table 1. Overall, *Cryptosporidium* species and rotavirus were the most common pathogens identified.

Table 1: Pathogens identified in bovine neonatal faecal samples in Northern Ireland, January to March 2013

Pathogen	Number	
	Tested	Positive (per cent)
<i>Cryptosporidium</i> species	736	234 (31.8%)
Rotavirus	734	227 (30.9%)
Coronavirus	738	38 (5.1%)
<i>Escherichia coli</i> K99	351	9 (2.6%)

Other enteric conditions

Parasitic ova found in ruminant faeces samples submitted during the period are shown in Table 2.

Table 2: Endoparasitic infections in ruminants in Northern Ireland, January to March 2013

	Total	No of parasitic ova					% positive
		Negative	+	++	+++	++++	
Liver fluke							
Bovine	1139	901	163	64	10	1	20.9%
Ovine	410	300	48	31	16	15	26.8%
Paramphistome							
Bovine	1139	614	227	229	53	16	46.1%
Ovine	411	304	71	28	6	2	26.0%
Coccidia							
Bovine	1302	1175	97	20	6	4	9.8%
Ovine	459	290	138	17	3	11	36.8%
Strongyle worm egg count	Total	<500 epg	≥500 epg		% Positive		
Bovine	1245	1226	19		1.5%		
Ovine	442	300	42		32.1%		

Johne's disease

Examination for *Mycobacterium avium* subspecies *paratuberculosis* (MAP) was carried out by microscopic examination, with Ziehl-Neelsen staining, on 248 bovine faecal samples. Thirteen samples (5.2 per cent) contained acid-fast organisms typical of MAP. Of 10,322 bovine blood samples that were tested for antibodies to MAP, 763 (7.4 per cent) were positive.

Reproductive and mammary diseases

Abortion

Specimens from 187 bovine abortions and stillbirths were examined during the first quarter. Significant pathogens were detected in 91 cases (48.7 per cent).

Of these, *Bacillus licheniformis* (28 cases, 15.0 per cent) was the most commonly identified pathogen. Other pathogens identified included *Trueperella pyogenes* (18 cases, 9.6 per cent), *Neospora caninum* (12 cases, 6.4 per cent), *Escherichia coli* (eight cases, 4.3 per cent), *Leptospira* Hardjo (eight cases, 4.3 per cent) and BVDV (five cases, 2.7 per cent).

Mastitis

A total of 517 bacterial isolates were cultured from milk samples submitted from acute and chronic mastitis cases. Fifty-six (10.8 per cent) samples yielded cultures of more than two organisms and were considered to be potentially contaminated. No bacteria were cultured in a further 133 samples.

E. coli was the most frequently isolated organism and accounted for 20.9 per cent of isolates cultured. Other frequently identified organisms included *Streptococcus uberis* (14.7 per cent), *Staphylococcus aureus* (8.7 per cent), coagulase-negative *Staphylococcus* species (6.8 per cent), *Streptococcus* species (5.8 per cent), alpha-haemolytic *streptococci* (5.6 per cent), *Streptococcus dysgalactiae* (5.6 per cent) and *Pseudomonas* species (4.6 per cent).

Skin diseases

Ectoparasites

Twelve bovine skin samples were examined for ectoparasites in the first quarter. Two were positive for mites, five were positive for lice and two were positive for ringworm.

Epidermolysis bullosa

A three-day-old female crossbred beef calf was submitted with skin lesions. The lesions were irregularly shaped, up to 10 cm across and consisted of full-thickness epidermal loss with a distribution over the distal limbs and around the ears and eyes, on the basis of these signs and histological findings, a diagnosis of epidermolysis bullosa was made (Fig 2). There had been no previous reports of this condition on the farm.

Other diseases

Idiopathic haemorrhagic diathesis

Cases of bovine neonatal pancytopenia continue to be recorded, with 11 cases diagnosed in the first three months of 2013. Of these, 10 were between one to two weeks old, and one case was three weeks old.



Figure 2

Epidermolysis bullosa on the distal foreleg of a three-day-old crossbred beef calf

Poisoning

During a routine TB test, a batch of three-to four-month-old calves was held in a yard which contained a footbath filled with formalin. Approximately two hours later two calves died and two more became recumbent. Postmortem examination revealed acute abomasitis and enteritis, with copious amounts of fibrin in the abomasal lumen and adhered to the intestinal mucosa. Abomasal contents had a strong odour of formalin. Accidental ingestion of the formalin footbath was considered the most likely cause of death.

Cardiac disease

A heifer weighing 414 kg was found dead with no premonitory signs. At post-mortem examination an abscess was present in the muscles caudal to the left shoulder. Another abscess measuring approximately 10 cm in diameter was also present in the free wall of the right ventricle. The lesion bulged into the ventricular lumen, greatly reducing the ventricular space (Fig 3). A pure growth of *T. pyogenes* was grown on culture.

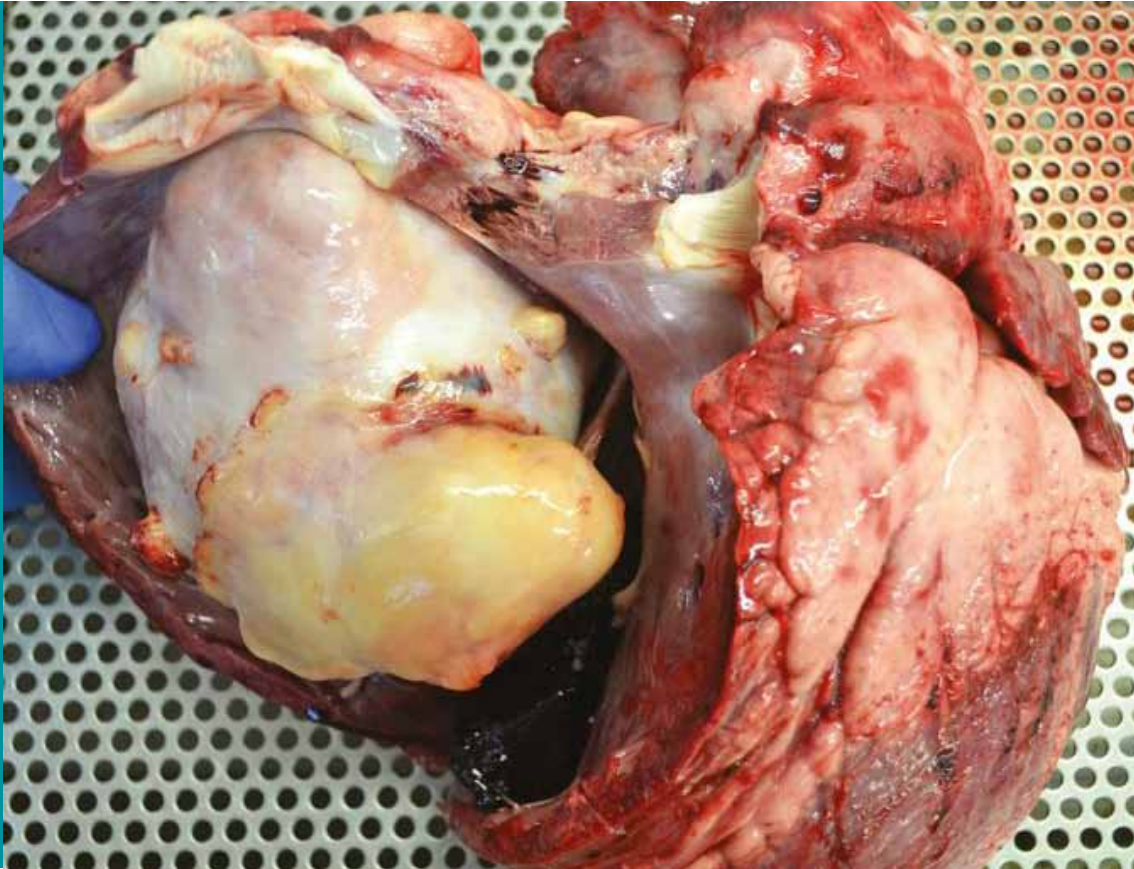


Figure 3

Intramural cardiac abscess due to *Trueperella pyogenes* in the right ventricle of a heifer

Small ruminants

Respiratory diseases

Respiratory disease was identified in 28 ovine postmortem submissions during this quarter. Jaagsiekte (12 cases), *M. haemolytica* (seven cases), *P. multocida* (two cases), laryngeal chondritis (two cases) and fibrinous pleurisy (two cases) were the most common diagnoses.

Johne's disease

Thirteen ovine faecal samples were examined microscopically using Ziehl-Neelsen staining for MAP. A single sample (7.7 per cent) contained acid-fast organisms typical of MAP. Eight ovine blood samples were tested for antibodies to MAP, one (12.5 per cent) of which was positive.

Reproductive diseases

Specimens from 281 ovine abortions and stillbirths were examined during the first quarter. Significant pathogens were detected in 182 cases (64.8 per cent). Pathogens identified included *Toxoplasma gondii* (57 cases, 20.3 per cent), *Chlamydia* species (47 cases, 16.7 per cent), *E. coli* (22 cases, 7.8 per cent), *Campylobacter* (18 cases, 6.4 per cent), *Leptospira* species (14 cases, 5.0 per cent) and *B. licheniformis* (10 cases, 3.6 per cent).

Amorphous globosus

A ewe gave birth to twins, one of which was healthy while the other consisted of a roughly spherical mass of tissue with two attached partially formed limbs. There was an absence of normal internal organs. Connective tissue was very oedematous and freely oozed fluid on cut surface.

Skin diseases

Ectoparasites

Thirty-eight ovine skin samples were examined for ectoparasites in the first quarter. Four were positive for mites, two were positive for lice and 12 were positive for ringworm.

Horses

One hundred and fifty-seven swabs were examined for the presence of *Taylorella equigenitalis* during this quarter, all of which were negative. Two swabs were cultured from horses with a history suggestive of strangles, both of which were negative.

Twenty-one equine skin samples were examined for ectoparasites in the first quarter. Four were positive for ringworm.