

# ANIMAL HEALTH SURVEILLANCE

July - September 2005 • Number 2005/3

## Quarterly highlights

### Primary bloat in beef cattle

A total of 11 cattle in a mixed mob of 200 died in the Lake Cargelligo district in late August. The cattle died over a 3-day period, and a number in the mob were reported by the owner to be distended on the left side. Several other properties in the district also reported losses. Although bloat was considered to be the most likely diagnosis, the owner lives in an anthrax-endemic area and was concerned about this and other possibilities.

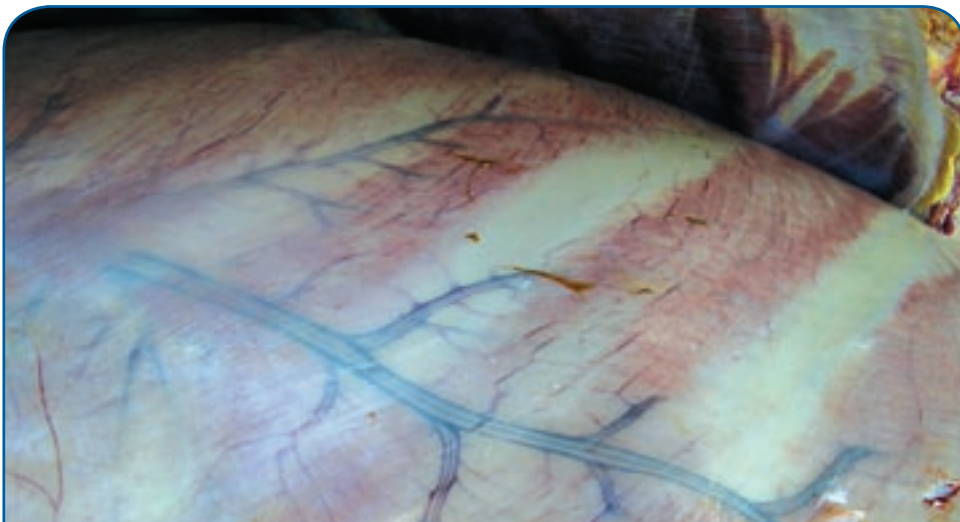
A post-mortem examination was conducted on a 9-year-old Angus cow. The rumen was grossly distended and when opened released gas and frothy green ingesta. Although a "bloat line" was not detected there were haemorrhages over the ribs anterior to the rumen. An imprint of the ribs remained on the serosal surface of the rumen. The spleen was flat and compressed.

Peripheral blood smears were submitted for examination and anthrax exclusion, although the history was not suggestive of anthrax. These were negative. The aqueous humour was also negative for nitrates.

The pasture on which the cattle were running consisted mostly of short Jemalong barrel medic (*Medicago truncatula*) with scattered lucerne (*Medicago sativa*). Although the pasture was fresh from recent rains it was not abundant. Bloat capsules were unavailable at the time, but the owner had alternative paddocks that were grass dominant and was advised to move the cattle to these paddocks. No further losses were reported.

**For further information contact Bruce Watt, District Veterinarian Condobolin RLPB, on (02) 6895 2152**

*Rib imprints on the serosal surface of the rumen in an Angus affected by bloat. Photo taken by Bruce Watt*



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Fatal case of bloat. Photo taken by Bruce Watt.

### Foot lice in sheep

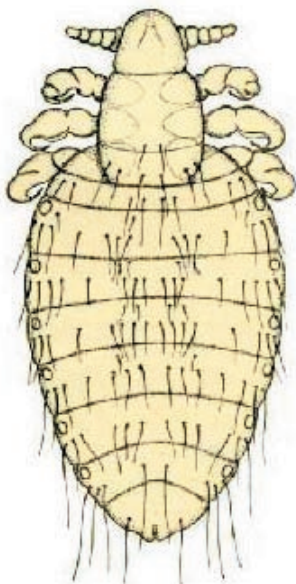
An infestation of foot lice (*Linognathus pedalis*) was found during a routine scrotal examination and ovine brucellosis testing of 36 one-year-old Border Leicester rams. Lice and eggs were clustered on the legs, inner thighs, and scrotum of the ram. Infestation was not noticed in any other rams in the group, although they were not examined closely for this.

Foot lice (also known as leg lice) are reported to be common, especially in Border Leicester sheep, but most infestations are light and escape notice.

There are some interesting points of difference between foot lice and body lice (*Bovicola ovis*). Foot lice are relatively immobile sucking lice. They can survive off the sheep for up to 18 days and are spread mainly as sheep walk through pasture contaminated by lice from other sheep. The owner was advised to treat the infestation by direct application of organophosphates, since pour-on lousicides are ineffective.

**For further information contact Bruce Watt, District Veterinarian Condobolin RLPB, on (02) 6895 2152**

*Linognathus pedalis*, the foot or leg louse. Image from CSIRO Entomology.



Leg lice on the hindlegs of a ram. Photo taken by Bruce Watt.



## Lead poisoning

Lead poisoning is proving to be an ongoing problem in the Northern Slopes district. On one property 20 weaners have died and four remain clinically affected from a group of 150 that gained access to a dump containing lead batteries. The owner has opted to test the entire steer portion of this mob at a cost of approximately \$20 per head, to clarify their residue status. If their status were to remain unknown, these cattle would have needed to be withheld from sale for 8 months or be sold with their offal condemned. The clinically affected animals, if they survive, must not be sold for 14 months.

In another case 12 animals from 50 died from access to only one battery, again in an old tip.

**For further information contact Belinda Walker, NSW DPI Gunnedah, on (02) 6741 8363.**

## Metabolic disease

Although drought conditions are easing in most of the Northern Slopes district, many cows are still in poor condition as they approach calving. During August and September a steady stream of metabolic cases was sent to the Laboratories, mostly to clarify whether ketosis or hypocalcaemia was the primary concern. Many of these cases were multifactorial, with heavily

pregnant cows that had been on poor feed and receiving inadequate supplementation succumbing to parasites as well as metabolic problems. Cold was an additional factor during early spring, making it difficult for these animals to cope, especially on the tablelands. An example was a recent case from Armidale in which laboratory tests confirmed the presence of fluke, worms, hypoproteinaemia, ketosis, marginal blood calcium levels and hyposelenosis.

**For further information contact Belinda Walker, NSW DPI Gunnedah on (02) 6741 8363.**

## Grain poisoning

Grain poisoning of sheep continued to be a problem in July. A couple of different syndromes were seen in the Wagga Wagga RLPB district. In some cases a straightforward acute grain poisoning led to deaths, and in others changes in feeding behaviour and patterns led to pregnancy toxemia. Most of the problems seemed to arise when conditions improved after periods of bad weather, when sheep that had reduced their feed intake suddenly increased it. These sorts of poisonings were also typically seen where sheep had access to green feed

as well as grain and could choose to eat the green feed for days before returning to the grain. Initial reports on the use of Eskalin® (a form of virginiamycin antibiotic) on grain seem to indicate that this product has a very valuable role in helping sheep through the transition period between full hand-feeding and full pasture feeding.

**For further information contact Tony Morton, DV Wagga Wagga RLPB, on (02) 6923 0900.**

## Rickets

A spectacular case of rickets was seen in the Wagga RLPB district when young lambs were taken out of a feedlot and put on a grass-dominant pasture. We normally see this condition on grazing cereal crops, but large numbers of lambs feeding on this grass-dominant pasture went down with hypocalcaemia. Twenty deaths occurred and approximately 30 others were affected out of a flock of 1100. Those that were treated with calcium and magnesium solutions generally recovered.

**For further information contact Tony Morton, DV Wagga Wagga RLPB, on (02) 6923 0900.**

## Listeriosis and phalaris polioencephalomalacia-like sudden death in sheep

Listeriosis affected three sheep in each of two mobs of about 200 three-year old Merino wethers on a property near Orange in July, and at about the same time phalaris polioencephalomalacia (PE)-like sudden death killed four sheep from a third mob on the same property. The first cases of listeriosis occurred in a mob grazing on short green pasture containing cocksfoot and phalaris and receiving supplementary feeds of wheat silage reported to show some evidence of mould and damage to the plastic wrap. Three animals were found sick, one of them recumbent and moribund, another circling, and a third one walking with a high-stepping gait and raised head. A few days later a second mob,



Leg lice on the scrotum of a ram. Photo taken by Bruce Watt.

which had been moved to a new paddock containing phalaris 3 days previously, was affected. Three animals showed severe depression: one was reported leaning on a fence, one caught between a fence and a trough, and the other was regurgitating. Two of them were recumbent the following day. Five of the six sick animals from the two mobs affected were euthanased and autopsied; they had no significant gross lesions. Ammonia concentrations in the sera and aqueous humour from the six animals were normal or marginally increased. Histopathology of the brains revealed a non-suppurative meningitis and pyogranulomatous encephalitis, with perivascular mononuclear cuffs, microabscesses and focal macrophage accumulations in the caudal brainstem considered pathognomonic for listeriosis. Gram staining of one brain stem section showed gram-positive rods consistent with listeria and associated with microabscesses. This case highlights the potential risk of large plastic-wrapped silage bales causing listeriosis in sheep and (to a lesser extent) cattle. The silage must be well made and each bale completely sealed from the air; otherwise, any dormant listeria organisms present may proliferate and cause an outbreak of listeriosis.

One day after the second listeriosis case, four animals from a third mob died overnight after grazing green oats and then being moved into a new paddock containing phalaris. Aqueous humour was taken and the brains removed from three of the four dead animals. The aqueous humour samples showed severe increases in ammonia levels. Lesions in the brains were restricted to the cerebrocortical grey matter and consisted of cerebrocortical oedema. These lesions and high ammonia levels in the aqueous humour were consistent with phalaris PE-like sudden death.

The combination of a sudden intake of nitrogen-rich feed and grazing fresh phalaris shoots creates a high risk of developing phalaris PE-like sudden death during the first 24 to 72 hours on fresh pasture.

**For further information contact Erika Bunker, RVL Orange, on (02) 6391 3809.**

## Superphosphate poisoning in sheep

In late September 2005 on a property near Galong, in southern New South Wales, superphosphate poisoning caused death in three and recumbency in one animal in a mob of 80 six-year-old Merino ewes. The mob had been brought in for crutching and weaning and held off food for 18–24 hours. Consequently, three ewes became recumbent and were treated with calcium borogluconate without response. Autopsy of one animal revealed a swollen liver with some areas showing a 'nutmeg' pattern, swollen and soft kidneys with a pale cortex, swollen ureters, increased amounts of clear abdominal and pleural fluid, and large intestinal changes suggestive of inflammation. On histopathological examination the most significant finding was acute renal tubular necrosis and degeneration, suggestive of a toxic cause. No birefringent crystals consistent with oxalate crystals were found. The liver showed localised areas of periarteriole to midzonal necrosis and diffuse degenerative changes. Further inquiries regarding possible exposure to nephrotoxic plants or chemicals revealed that the ewes had had access to a superphosphate dump area while yarded. The superphosphate had been spread out on the farm in March 2005, and rams had subsequently been grazing in this same paddock with no ill effects. In this case a presumptive initial diagnosis of hypocalcaemia was made. Coupled with the kidney damage, oxalate poisoning was considered most likely. It was only the histopathological changes that really pointed to the investigation of superphosphate exposure. In the Young RLPB district sheep very commonly have access to piles of superphosphate and poisoning is rare.

Outbreaks of superphosphate poisoning occur more readily when sheep are hungry or nutritionally stressed, for example, in sheep grazing short pasture recently top-dressed with superphosphate fertilizer, or (as in this case) in hungry sheep grazing around superphosphate dump sites and foraging any remaining granules.

**For further information contact Elizabeth Braddon, DV Young RLPB, on (02) 6382 1255.**

Failure to observe withholding period requirements on a wheat crop that had been treated with the fungicide Turret® (triadimefon) and then cut for hay and fed to joining crossbred ewes appears to have caused foetal malformations, with lesions such as cyclopia, missing mandibles and missing abdomens. Eleven out of 1574 lambs were noticed to have congenital malformations; the owner assumed that probably more had been born but had been removed by predation. The lesions were consistent with interference with the development of the foetal branchial arch by the action of a teratogenic agent during the first 2 months of pregnancy. Similar lesions have been reported in trials with laboratory animals. A full report will be published in the Australian Veterinary Journal in due course.

**For further information contact Tony Morton, DV Wagga Wagga RLPB, on (02) 6923 0900.**

A property in the Cooma RLPB district experienced a 50% lambing loss in maiden Border Leicester ewes. The ewes were in good condition (score 4); they were grazing natural pastures and had been supplement-fed a 'lamb and ewe' sheep nut premix.

Five of 10 ewes that had lambed died from septicaemia resulting from foetal necrosis, uterine necrosis and peritonitis, but the case presentation was failure to lamb rather than an abortifacient infection. Bacteriology ruled out salmonellosis, campylobacteriosis and brucellosis. Pestivirus infection and toxoplasmosis were also excluded. On close analysis of the supplementary diet, a deficiency in calcium was discovered. Addition of lime at 1.5% prevented further losses.

Pre-lambing mortalities were investigated on a property in the Wagga RLPB district. A mob of 320 ewes suffered 18 acute deaths and six deaths as a result of vaginal prolapse. The same underlying cause is possible. The pregnant ewes were in apparent good health when observed at daily supplementary

feeding. They suddenly become sick, usually with a vaginal discharge, and died within 12 hours. Post-mortem examination revealed the presence of dead twin lambs that were extensively decomposed. Other ewes lambed normally. No consistent infectious cause could be established, nor could any management or feed factor be identified as a likely cause.

Post-lambing mortalities from clostridial infection were investigated by DV Wagga Wagga. Poor mulesing technique had led to excessive damage to tissues around the vulva, and subsequent clostridial invasion resulted in death from a blackleg-like condition in 12 out of 460 merino ewes. The ewes had not been given a clostridial 5-in-1 booster vaccination before lambing.

**For further information contact Alex Stephens, DV Cooma RLPB, on (02) 6452 1122, or Tony Morton, DV Wagga Wagga RLPB, on (02) 6923 0900.**

## DISEASE SURVEILLANCE AND CONTROL PROGRAMS

### Johne's disease market assurance programs (MAPs)

A summary of the numbers of each species at each level of MAP testing as at the end of September 2005 is shown in Table 1.

**Table 1. Numbers of each species at each MAP test level**

MAP	MN1	MN2	MN3
Alpaca	9	20	66
Sheep	91	124	255
Goat	10	25	19
Cattle	138	294	280

**For more information contact Yuni Yunamu, Veterinary Officer, NSW DPI Goulburn, on (02) 4828 6628.**

*Continued on back cover*

## Notifiable Disease Investigations

### Anthrax exclusions

Anthrax was excluded as the cause of death on five occasions during the quarter. All cases involved beef cattle, with urea intoxication diagnosed in one case and intestinal torsion suspected in another case, both having single animal mortalities. Hypocalcaemia was suspected on two of the other three occasions where mortalities ranged from 3% to 5%.

**For more information contact Barbara Moloney, NSW DPI Orange, on (02) 6391 3687.**

### Strangles

A filly on the North Coast undergoing treatment for a respiratory tract infection during August developed submandibular abscesses. *Streptococcus equi* subsp. *equi* was isolated from cultured swabs. The filly was isolated. Of 11 other horses on the property, five had been in contact with the filly and were closely monitored for signs of infection. Four of these developed signs of strangles (not as severe as in the index case) and were treated. A vaccination program was initiated on the property. The veterinarian has not seen any further strangles cases in the area.

### Avian tuberculosis in pigs

Inspectors at an abattoir in northern NSW detected tuberculosis lesions in the mesenteric lymph nodes of 20-week-old pigs in late June. Of the consignment of 200 pigs 60% to 75% were affected. Up to four pigs had lesions in the lymph nodes of the head. Samples were collected and sent to RVLs Wollongbar and Menangle, with mycobacterial lymphadenitis confirmed. *Mycobacterium avium* was cultured from the first lymph node submission. The pigs were traced to two contract growers for one company. Over the next 7 days similarly affected pigs were

identified at slaughter: 10% to 20% of 199 pigs were affected in one consignment and 50% of 203 pigs affected in another. In a subsequent consignment only one out of 104 pigs was affected. These pigs were from a younger batch. The district veterinarian and ranger from Armidale RLPB inspected the contract grower sites, finding no obvious problems, with all pigs in good health and adequately housed. Inspection of the company farm led to identification of the possible sources of infection:

- grain contaminated with dead birds had been processed into pig feed and used on the home farm and distributed to the contract grower sites.
- the water supply on the home farm was drawn untreated from dams where there were significant populations of wild birds (mainly ducks).

**For more information contact John MacFarlane, DV Armidale RLPB, on (02) 6772 2366.**

### Hendra virus exclusion

In August a horse from the Casino district was found dead after appearing unwell the night before. Gross post-mortem findings included copious froth from the nostrils, blood-stained urine, jaundiced mucous membranes and fat, and lungs that were oedematous and froth filled. Samples were submitted to the Australian Animal Health Laboratory for Hendra virus exclusion. TaqMan assay results on the liver and spleen were negative, and an alternative diagnosis of acute streptococcal septicaemia (*S. zooepidemicus*) was determined on the results of bacterial culture and histopathology conducted at RVL Wollongbar.

**For more information on horse investigations contact Sarah Robson, NSW DPI Wagga Wagga, on (02) 6938 1967.**



## DISEASE SURVEILLANCE AND CONTROL PROGRAMS

### Transmissible spongiform encephalopathy (TSE)

TSE surveillance notifications by RLPB for the period 1.7.2005 to 30.9.2005 are listed in Table 2.

**Table 2. Transmissible spongiform encephalopathy notifications, 1.7.2005 to 30.9.2005**

RLPB	DV sheep	DV cattle	Abattoir sheep	Abattoir Cattle	Private vet sheep	Private vet cattle	Total sheep	Total cattle
Armidale		2						2
Bombala	1						1	
Casino				1				1
Condobolin	1						1	
Cooma	1	1					1	1
Coonabarabran	1						1	
Dubbo						2		2
Hume	2				6	1	8	1
Maitland		2						2
Murray					2	4	2	4
Narrabri		2						2
Narrandera	1						1	
Tamworth		1						1
Wagga Wagga	11						11	
Total	18	8	0	1	8	7	26	16

For more information contact Sally Spence, NSW DPI Orange, on (02) 6391 3630.

### Getting Information on Animal Diseases

This surveillance report can only convey a very limited amount of information about the occurrence and distribution of livestock diseases in New South Wales. If you would like more specific information about diseases occurring in your part of the State,

contact your local Rural Lands Protection Board District Veterinarian, Departmental Senior Regional Animal Health Manager, Regional Health Leader, or Regional Veterinary Laboratory.

**For Statewide information, contact NSW DPI's Animal & Plant Biosecurity Branch in Orange on (02) 6391 3237 or fax (02) 6361 9976.**

For more information on national disease status, check the National Animal Health Information System (NAHIS) via the internet at:  
<http://www.animalhealthaustralia.com.au/status/nahis.cfm>

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Copies of NSW Animal Health Surveillance reports are available on the internet at:  
<http://www.dpi.nsw.gov.au/reader/ah-surveillance>

#### Disclaimer

The information contained in this publication is based on knowledge and understanding at the time of writing (October 2005). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up-to-date and to check the currency of the information with the appropriate officer of New South Wales Department of Primary Industries or the user's independent adviser.



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