

ANIMAL HEALTH SURVEILLANCE

January - March 2005 • Number 2005/1

QUARTERLY HIGHLIGHTS

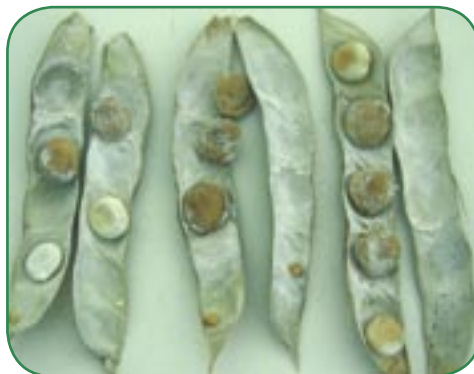
Lupinosis in Sheep

Approximately 100 sheep on a property in the Wagga Wagga district died from lupinosis in January. The sheep had been on *albus* lupin stubble for 10 days. The sheep losses were unexpected as *albus* lupins are generally regarded as safe, and there were plenty of normal-appearing lupins in the stubble. There were some fungal damaged plants, pods and seed present. Affected sheep were jaundiced and depressed. Post mortem revealed a generalised jaundice, a yellow-orange coloured liver, enlarged gall bladder and large congested kidneys. Histopathology on liver samples confirmed lupinosis. Fungal culture of damaged seed pods, harvested grains and stubble confirmed *Phomopsis* (*Diaporthe toxica*). The sheep were removed from the stubble immediately the farmer noticed the problem, however deaths continued steadily for two weeks after removal, as is expected with lupinosis.

Lupinosis from *albus* lupins is not common. Large areas (more than 16,000 hectares) in NSW are sown to *albus* lupins each year with very few (reported) incidents of lupinosis. *Albus* lupins usually have sufficient plant resistance to prevent the development of *Phomopsis*. It is thought that the conditions that predisposed to the development of *Phomopsis* in this case was moisture stress during grain fill, followed by above average rainfall in November and December. Hail damage may have been another predisposing factor.



Phomopsis infected seed. Photo by Ray Cowley NSW DPI.



Confirmed *Phomopsis* on seed in pod. Photo by Ray Cowley NSW DPI.



Generalised jaundice of carcass. Photo by Tony Morton, DV Wagga Wagga RLPB

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NSW DEPARTMENT OF
PRIMARY INDUSTRIES

Lysosomal storage disease in Angus Cross calves

Over the past 4 years, each year one or two calves on a commercial Angus and Angus cross beef cattle property develop a progressive neurological disorder at approximately 3 months of age. Initially the affected calf displays hindlimb weakness with a sideways drifting gait. Symptoms are exacerbated by stress and forced exercise. The condition progresses over about 4 months until the animal can no longer stand. Death occurs due to misadventure or necessary destruction. The history points to this condition being genetic in origin rather than toxic. Angus bulls (up to 3 bulls) were shared by 2 farms, with affected calves being seen sometimes on one farm, sometimes the other, and sometimes both. This calving season only one bull was used on the farm where 3 affected calves are. This bull was not used on the other farm and no calves were affected. Unfortunately that bull had been culled so was not available for testing. No correlation with pasture type and the appearance of disease was found.

An affected calf was euthanased when the condition had progressed to the point where it collapsed frequently and struggled to get to its feet.

DNA testing was carried out and was consistent with the animal NOT carrying the 961T→C mutation responsible for α -mannosidosis in Angus and Murray Grey cattle. However, histopathology

performed on brain and spinal cord was morphologically consistent with a lysosomal storage disease such as mannosidosis. It is possible that a mutation in the mannosidase gene different to that usually seen (961T C) may have occurred. Further research and testing is being conducted by geneticists at Elizabeth Macarthur Agricultural Institute.

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

Salmonellosis in sheep

Significant sheep mortality due to *Salmonella* Typhimurium occurred on two properties in the Hume district during the quarter. On one property, 10-month-old merino weaners were yarded for 48 hours for crutching and on return to pasture approximately 40% developed fever, lethargy, stiffness (particularly of the hind limbs), diarrhoea, coughing and increased respiratory effort. Affected animals went down, and death occurred within a couple hours of recumbency. Post mortem examination revealed inflamed, oedematous small intestines and enlarged, inflamed mesenteric lymph nodes. *Salmonella* Typhimurium was cultured from intestinal samples, mesenteric lymph nodes, lung and liver. Total losses reached 200. The mob was treated with oxytetracycline and fluid electrolyte therapy (oral Vytrate®). Treatment



was very effective. An improvement was noticed within 24 hours with losses subsiding quickly.

On the second property mortalities occurred in a mob of 5-month-old, recently shorn, merino weaners following a sudden cold snap in the middle of hot weather (approximately 30°C drop in temperature). This mob had been treated with Lincospectin® a week previously as part of a footrot program. The combination of Lincospectin® treatment altering the normal intestinal flora and the stress of the sudden cold weather were thought to be the predisposing factors to disease in this case. 40 out of 250 died, and a further 50 were clinically affected. These animals were depressed, fevered, hunched in the back and displayed a stiff hind limb gait. They had an increased respiratory effort and some had diarrhoea. Post mortem examination revealed enteritis and inflamed mesenteric lymph nodes. *Salmonella* Typhimurium was cultured from the small intestine, mesenteric lymph nodes and liver. Treatment consisted of oxytetracycline injection and Vytrate drench®, The response to treatment was good with 40 out of 50 lambs recovering.

For further information contact Steve Whittaker, DV Hume RLPB on (02) 6040 4210.



NOTIFIABLE DISEASES

Investigations to exclude exotic animal diseases

From time to time, samples are submitted directly to AAHL by practitioners or private laboratories for diagnostic investigation of a notifiable exotic disease (category 2 or 3 submissions). This creates problems for state authorities to be appropriately notified and for follow-up investigations to be implemented.

Samples must not be sent to AAHL for any exotic disease exclusion without first speaking with a NSW DPI or RLPB Veterinarian. In most circumstances submission to AAHL will be via NSW DPI Regional Veterinary Laboratory. Veterinarians working in other states should consult relevant authorities.

All veterinarians (including practitioners and private laboratory veterinarians) are reminded that in NSW under the Exotic Diseases of Animals Act (1991), any person who suspects that an animal is infected with an exotic disease (including Hendra virus and Australian Bat Lyssavirus) must notify an inspector appointed under that act as quickly as possible. The Stock Diseases Act (1923) applies to notifiable endemic diseases. Equivalent legislation exists in other States. An updated circular detailing the responsibilities of veterinarians in relation to notifiable diseases will be distributed separately.

It is important that veterinarians and animal owners/attendants are aware of who to contact in the event of a suspect exotic disease or other animal health emergency. The list below is current at the time of printing

1. District Veterinarians

Rural practitioners: Refer to "Rural Lands Protection Board" in the local white pages telephone directory.

Urban practitioners (Sydney and Wollongong): Contact Keith Hart, Moss Vale RLPB 02 4655 9165 (work), 0408 409 391 (mobile).

Urban practitioners (Newcastle and Central Coast): Contact Digby Rayward, Maitland RLPB, 02 4932 8866 (work), 02 4996 4629 (after hours), 0427 493 617 (mobile).

2. NSW Department of Primary Industries Veterinarians

Location	Contact	Work	Mobile
Broken Hill:	Greg Curran	08 8087 1222	0427 107 891
Dareton:	Samantha Yorke	03 5027 4409	
Goulburn:	Ruby Petersen	02 4828 6636	0402 059 243
Orange:	Julie Bolam	02 6391 3924	0427 311 426
Wagga Wagga:	Sarah Robson	02 6938 1967	0429 446 557

3. Regional Veterinary Laboratories (RVL)

Menangle:	Duty Officer	02 4640 6327 (all hours)
Orange:	Duty Officer	02 6391 3858 (all hours)
Wollongbar:	Duty Officer	02 6626 1261 (all hours)

4. Disease Watch Hotline

If none of the above local officers can be contacted, you can phone the NSW Chief Veterinary Officer, directly or via a paging service, at all hours on 1800 675 888

Anthrax

Three anthrax cases were reported during the quarter. All occurred in the known anthrax endemic area of the state. The first two cases occurred in late January, one in the Condobolin district involving three deaths in a mob of 500 ewes, and the other in the Murray district resulting in 10 deaths in a herd of 380 beef cattle. The third case occurred in late March, with 10 deaths out of 1,950 sheep on a Narrandera district property. Carcasses were burnt or buried, all in contact animals were vaccinated and properties were placed in quarantine. No stock movements had occurred off any property within the previous two months or more. All three cases were unconnected, but each had either a previous history of anthrax on the property or neighbouring property within the past 10-15 years.

There were 13 investigations negative for anthrax during the quarter. Eleven of these involved cattle, predominantly beef, where alternate diagnoses included mucosal disease and possible rock fern toxicity. The remaining two investigations involved sheep, with enterotoxaemia as alternate diagnosis in one case and acute toxic hepatopathy in the other.

For further information contact Barbara Moloney, Technical Specialist, Disease Surveillance, NSW DPI on (02) 6391 3687.

Chlamydiosis in poultry

Several cases of chlamydiosis in commercial poultry were reported in 2004. Trace back investigations on the breeder farm supplying the day olds (see NSW Surveillance 2004/4) and the breeder farm that supplied the layer pullets (see NSW Surveillance 2004/3) found the breeders displaying obvious clinical signs but repeated immuno-fluorescence antibody testing (IFAT) indicated the presence of chlamydia in these breeder flocks. An additional breeder flock owned by the same company was reported with increased mortality, cough, slightly enlarged liver with white spots and focal liver necrosis. Liver and splenic smears from this flock were found to be Chlamydia positive by IFAT and further confirmation by PCR.

These findings in the absence of any obvious other epidemiological source and coupled with the temporal pattern of the disease in the pullets and meat chickens raise the possibility of vertical transmission, although vertical transmission of chlamydiosis has not been recognised as a significant method of transmission in poultry.

For further information contact George Arzey, Senior VO (Poultry) on (02) 4640 6402.

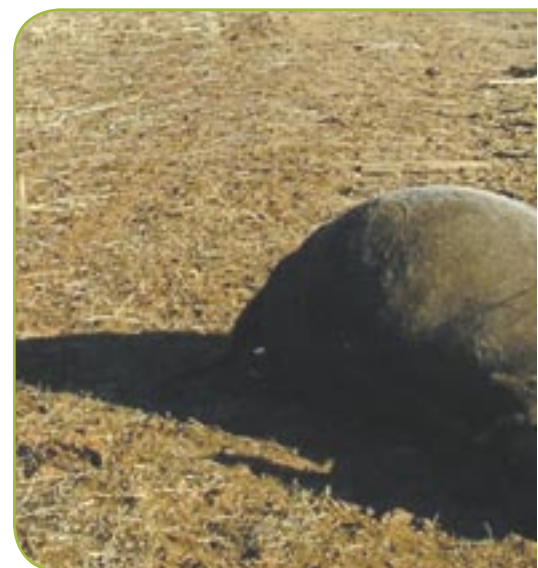
CHEMICAL AND PLANT POISONINGS

Lead Poisoning in Cattle

A total of four cows were clinically affected by lead poisoning and died. The animals were part of a mature mixed mob of 25 beef cattle from the Condobolin district. The first two deaths occurred during a ten day period. Signs seen by the owner of the first cow to die included marked weight loss, staggering gait, nasal discharge, lateral recumbency, and arching of neck before death. The second cow died suddenly in fat body condition. The cattle had been moved to a barley stubble paddock in the previous four weeks. This paddock contains an old tip and is watered by a dam.

The range of clinical signs noted in the remaining two sick cows examined included dullness, slow response to stimuli, reluctance to walk, absence of menace response, crusty nasal discharge, non-motile rumen, regular clonic head twitch, and tongue flaccid and slow to retract. The attending veterinary practitioner was suspicious that lead poisoning may have been involved. A paddock inspection revealed lead from old batteries was readily available with evidence of cattle tracks around the area.

Blood samples were taken from the two clinically sick cows. Laboratory testing showed 4.12 and 4.89 $\mu\text{mol/L}$ of blood lead (concentrations of blood lead $>1.7 \mu\text{mol/L}$ are diagnostic for lead toxicity). The tissue lead in kidney submitted from the second dead cow, was conclusively high in lead. Both



Dead cow found typically adjacent to fenceline, due to blindness before death

clinical cases subsequently died. Cattle on the property are excluded from an abandoned rubbish tip and sources of lead. The remaining exposed non-clinical animals will be detained on the property for at least eight months.

For further information contact Bruce Watt, DV Condobolin RLPB on (02) 6895 2152



Example of lead battery found in paddock



Dull cow showing flaccid tongue



Acute chemical poisoning in crossbred weaners

Sixty out of 120 six-month-old crossbred ewes died over night after being jetted with a chemical sold in an old 20 Litre drum of "Top clip blue shield" at a clearance sale. The remaining 60 animals appeared unaffected. Laboratory investigation strongly suggested that the sheep had been jetted with diazinon. Aged diazinon contains many potentially toxic chemicals. It is thought that the sheep had been jetted in two lots with the surviving portion treated with a more thoroughly mixed volume of the chemical. The farmer commented that the diazinon mixed poorly and the mixture looked abnormal.

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

Suspect Ward's Weed Poisoning in Cattle and Sheep in the Western Division

Ward's Weed (*Carrichtera annua*) has been increasing in range and quantity in western NSW. Ward's weed grows in all mainland states and has not previously been reported to be toxic to livestock. Plants from the Brassicaceae family that are known to be poisonous are usually only occasionally poisonous. The brassicas can cause 12 or more toxic syndromes; Glucosinolate associated problems (neonatal goitre, reproductive problems, digestive irritation syndrome), an Isothiocyanate associated problem (rumen stasis syndrome), an S-methylcysteine sulphoxide (SMCO) associated problem (haemolytic anaemia), a Tryptophan associated problem (acute respiratory distress), a sulphur associated problem (polioencephalomalacia), a possible organic nitrile associated problem (blindness), nitrate poisoning, oxalate poisoning and uncertain toxin associated problems (photosensitization and bloat).

Investigation of 5 cases of mortalities and illhealth in stock on Ward's Weed in the western division has raised suspicion that this member of the Brassica family may be toxic.

Cattle and sheep (rams) have shown similar clinical and postmortem changes on pastures with quantities of green flowering and seeding Ward's Weed at different locations and in different years.

Clinical features include death over hours or days (some are simply found dead with scuffing of the ground); reluctance to walk, lameness or recumbency with reluctance or inability to rise; diarrhoea; malaise; and altered respiratory pattern in some animals.

Key common postmortem features include An enlarged gall bladder with thickened opaque wall with congestion and sometimes haemorrhage, jaundice, congestion and some haemorrhages around the joints of lower limbs in some cases; increased yellow fluid in joints of others, enteritis and congested mucosa of gastro-intestinal tract, including the rumen, quantities of Ward's Weed in the rumen and variable changes in lung (consolidation, congestion, pleurisy, for example).

Mortality rates ranged from low to high. A ram mob at Ivanhoe lost 40 out of 160 rams. Morbidity was usually higher than mortality with most affected recovering. Stock do not appear to be troubled by dry Ward's Weed.

Differential diagnoses such as salmonellosis, viral diarrhoea, Pimelea and other plant poisonings have been ruled out by pasture examination and pathology findings.

For further information contact Greg Curran, Veterinary Officer, Broken Hill on (08) 8087 1222.

Figure 1.

Ward's Weed (flowering, with green "tadpole" pods) and European Spinach (*Tetragonia tetragonoides*) on left



Figure 2.

Enlarged gall bladder with thickened wall, showing congestion, in a Menindee cow



Figure 3.

Typical appearance of intestinal mucosa in a Menindee cow



Photos supplied by Greg Curran

DISEASE MONITORING AND CONTROL PROGRAMS

Footrot

The NSW Footrot Strategic Plan continues to progress such that over 85% of the State is now gazetted as Protected Area for footrot. At the NSW Footrot Steering Committee meeting in March applications were approved from Wagga Wagga and Murray Rural Lands Protection Boards to progress the remaining Control Areas in those Boards to Protected Area status. This significant achievement reflects the commitment of RLPB staff and the sheep industry in those areas to continue to eradicate footrot.

The Footrot Strategic Plan is still on track to have the whole State declared Protected Area for footrot by the end of the year. Currently only Armidale, Central Tablelands, Gundagai and Hume Boards have a footrot flock prevalence above 1% and eradication programs are continuing in many areas.



The following table summarises the decrease in footrot flock prevalence in New South Wales since the Strategic Plan was launched in 1988.

Numbers	1988	1991	1994	1999	2003	2004 (Dec)
Infected flocks	3820	6179*	3319	588	236	154
Flocks in state	45,399	41,244	40,750	32,378	25,158	23,493
Flock Prevalence	8%	15%	8.1%	2%	1%	0.66%

* increase in flock prevalence in 1991 associated with better disease intelligence and more responsible reporting by sheep owners.

Bovine Johne's disease Market Assurance Program (Cattle MAP)

At the end of the March 2005 quarter, there were 721 herds enrolled in the Cattle MAP. Of these, 169 herds were MN1 status, 236 were MN2 status and 316 herds were MN3 status.

The enterprise breakdown of these herds is shown in Table 1. During the quarter, 26 MAP herds left the scheme and dropped to NA status. There were no break-downs of MAP herds to Infected during the quarter.

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

Enzootic Bovine Leucosis

At the end of March 2005 the EBL figures for NSW were as follows:

MONITORED FREE	1087 (98.6%) dairy herds
UNDER INVESTIGATION	1 (0.1%) dairy herd
NOT ASSESSED	14 (1.3%) dairy herds
TOTAL	1102 (100%) dairy herds

The March 2005 BMT testing round is still being completed.

**For further information contact
Richard Zelski, Veterinary Officer, NSW DPI on
(02) 4939 8959.**

Table 1. Cattle MAP herds by enterprise

Enterprise	Total Herds	Stud	Commercial
Beef	504 (69.9%)	385 (76.4%)	119 (23.6%)
Dairy	193 (26.8%)	116 (60.1%)	77 (39.9%)
Mixed		6 (26.1%)	17 (73.90%)
Total		507 (70.3%)	223 (29.5%)

National Transmissible Spongiform Encephalopathy Surveillance Program

TSE submissions by Rural Lands Protection Board to 31/03/2005

RLPB	Government vet		Abattoir vet		Private vet		Total	
	cattle	sheep	cattle	sheep	cattle	sheep	cattle	sheep
SFVO Dubbo Region								
DUBBO					1	1	1	1
Region Total					1	1	1	1
SFVO Grafton Region								
ARMIDALE		2						2
NORTHERN NEW ENGLAND		1			1		1	1
Region Total		3			1		1	3
SFVO Gunnedah Region								
COONABARABRAN	1	1					1	1
COONAMBLE		2						2
NARRABRI	2						2	
Region Total	3	3					3	3
SFVO Maitland Region								
HUNTER	1						1	
Region Total	1						1	
SFVO Orange Region								
CENTRAL TABLELANDS	1						1	
Region Total	1						1	
SFVO Wagga Wagga Region								
HUME		1			1	2	1	3
MURRAY					1		1	
NARRANDERA		1						1
RIVERINA					1		1	
WAGGA WAGGA		3						3
Region Total		5			3	2	3	7
Grand Total	5	11	0	0	5	3	10	14

Internal Parasites

Dry conditions throughout late summer and autumn over much of NSW meant conditions were tough for grass and therefore worms. However there were outbreaks of parasitism in various localities, notably haemonchosis (very high egg counts, clinical signs and deaths) in parts of north western NSW (pockets in the Walgett district) and the New England early in autumn.

Even in dry conditions, worms are unpredictable, and regular worm egg count monitoring (worm testing) is advised. "Don't guess; WormTest!"

The big happening "worm-wise" was the national launch of WormBoss on 11 March at 'Woolorama', Wagin WA. The increasing prevalence of drench-resistance has been the driving force behind a national initiative to help producers control the problem of sheep worms.

WormBoss was developed by the Australian Sheep Industry CRC and Australian Wool Innovation Limited using the combined knowledge of the nation's leading parasitologists, consultants, drench manufacturers and resellers. The WormBoss website or CD-ROM will provide retailers and producers with the most reliable and consistent information on worm management. It encourages producers to carry out worm counting and drench resistance tests at an early stage. The aim is to prevent unnecessary drenching, thereby decreasing the risk of sheep worm resistance across the nation.

Producers can get copies of the WormBoss CD through Elders, Landmark, CRT and other resellers, or they can access WormBoss on-line at www.wormboss.com.au.

wormboss

BELOW

L-R: Arthur Le Feuvre (1), Scott Williams, Ian Carmichael (2), Rob Woodgate (3) and Brown Besier (4), Noel Campbell (5), Stephen Love (6). Absent: Andrew Bailey (7).

- 1) Senior Extension Officer, Queensland Dept of Primary Industries and Fisheries
- 2) Chief Veterinary Parasitologist, South Australian Research and Development Institute
- 3) Veterinary Officer, Department of Agriculture, Western Australia
- 4) Principal Veterinary Parasitologist, Department of Agriculture Western Australia, Manager, Sheep CRC parasitology Sub-Program
- 5) Senior Parasitologist, Department of Primary Industries, Victoria
- 6) Veterinarian/State Coordinator-Internal Parasites, NSW Department of Primary Industries (incorporating NSW Agriculture)
- 7) Department of Primary Industries, Water and Environment, Tasmania



Disclaimer

The information contained in this publication is based on knowledge and understanding at the time of writing (March 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 NSW Department of Primary Industries or the user's independent adviser

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;

Department Senior Regional Animal Health manager, Regional Animal Health Leader; or Regional Veterinary Laboratory.

For Statewide information, contact NSW DPIs Quality Assurance Program 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.aahc.om.au/nahis/>

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**Copies of NSW Animal Health Surveillance reports are available on the internet at:
<http://www.agric.nsw.gov.au/QA/Newsletter>**

