NSW DPI

NEW SOUTH WALES

ANIMAL HEALTH SURVEILLANCE

January - March 2006 • Number 2006/1

QUARTERLY HIGHLIGHTS

Wild birds and avian influenza

NSW DPI is working in collaboration with the NSW Game Council to investigate the role of wild birds in the epidemiology of avian influenza. Funding for this project has been provided by the Wildlife and Exotic Disease Preparedness Program. Surveillance on wild birds in NSW is being specifically targeted to assess the role of wild birds in introducing foreign subtypes and to assess the risks of low pathogenic virus becoming highly pathogenic through contact with poultry. A geographic information system using Birds Australia data, wetlands information and poultry locations has identified priority wetlands for surveillance to address these key aims. Consideration has been given to targeting the species most likely to be involved, suitable locations and timing; and adequate sample sizes to estimate virus prevalence.

Since October 2005, 702 cloacal samples have been collected in 6 locations in NSW, with considerable assistance from the NSW Game Council. Species sampled include Grey Teal (260), Pacific Black Duck (230), Wood duck (180) and other anatids. So far, 300 of these samples have been examined at Elizabeth Macarthur Agricultural Institute (EMAI) using Flu Detect® and PCR tests - all of these were negative for avian influenza. Testing is in progress for the remaining samples.

For further information contact John Tracey, NSW DPI on (02) 63913952.

Deaths in magpies and other wild bird species

Widespread deaths have been reported in magpies and some other species (currawongs, pee wees, koels etc) in the Central Coast and Sydney areas during February and March. Over 80 reports of deaths have occurred and each report has involved a number of birds.

The major sign in the birds is weakness followed by death. A number of organisations including NSW DPI, NSW DEC, Australian Registry of Wildlife Health, DAFF and Taronga Park Zoo are working to solve the problem.

Samples of affected birds have been tested at EMAI and other laboratories. These tests have indicated that avian influenza, Newcastle disease and West Nile virus are not involved. The condition is thought to be due to either a viral or protozoal infection.

For further information contact Diane Ryan, NSW DPI on (02) 4640 6378.

Cerebellar abiotrophy in sheep

Cerebellar abiotrophy affected ten sheep in a flock size of 8000 fine wool Merino ewes and wethers on a property near Armidale in March 2006.

Signs were first noted when animals were disturbed. Signs first appear in sheep when they are three to five years old. Many sheep were maintained for a number of years by carrying them into the yards and back to the paddock on a vehicle. The signs noted were essentially a slow, progressive hindlimb stagger and falling with fine body tremors. Sheep regained mobility and could stand if left alone for a while.

In this issue!

NSW DEPARTMENT OF PRIMARY INDUSTRIES

Slowly progressive neurological signs in a number of sheep had been an ongoing problem on the property for at least five years. The owner initially thought this was a Phalaris Staggers problem as it had occurred in the years when good spring rains were occurring but a small number of cases continued to develop through the drought years.

Autopsy of two affected sheep revealed no gross lesions. The sheep had a low to moderate worm burden. Histopathology of the cerebellum of both sheep revealed severe depletion of Purkinje cells in most gyri, with occasional degenerate Purkinje cells found. There were increased numbers of glial cells in the Purkinje cell layer and adjacent molecular layer. The spinal cord showed mild to moderate Wallerian degeneration in the white matter and mild axonal degeneration in the grey matter.

Phalaris staggers could be excluded as there was no history of grazing phalaris, and no phalaris pigment was found in the lateral geniculate body. Histopathology was negative for TSE.

Cerebellar abiotrophy in sheep is a disorder associated with fine wool Merino blood lines, which is suggestive of a hereditary condition.

For further information contact Erika Bunker NSW DPI on (02) 6391 3809 or John Macfarlane, DV Armidale RLPB on (02) 6772 2366.

Malignant Catarrhal Fever

In January a 5-month-old Hereford steer was presented to a local veterinarian from a property where sheep and cattle are run in conjunction. The steer was severely depressed, had a fever of 41.2ºC and ulceration of the nasal plane, the dental pad, the cheeks and the tongue. There was some corneal oedema and the conjunctivae were red and inflamed. There was some inflammation at the coronet.

The steer failed to respond to treatment and within 36 hours a post-mortem examination was conducted. By this stage ocular signs had progressed and here had been sloughing of the epithelial layer of the tongue and upper palate. Generally the skin felt thickened and nodular. There was inflammation of the trachea, lungs and intestines. Histopathology confirmed multiorgan vasculitis and vascular degeneration, strongly suggestive of Malignant Catarrhal Fever (MCF). Testing at AAHL confirmed MCF by PCR and TaqMan assay. Foot-and-Mouth disease virus and Rinderpest were excluded.

For further information contact Alexandra Stephens, DV Cooma RLPB, on (02) 6452 1122.

Zinc toxicity in dairy cattle

During February, a Holstein-Friesian dairy herd in the Moss Vale district was inadvertently supplemented with 10 times the recommended level of zinc (3 times the toxic threshold). The zinc supplement was added to the diet as a preventative treatment for facial eczema. Cows exhibiting previous episodes of photosensitization were present in the herd. Reduction in or cessation of milk production occurred in approximately 40% of the 200+ cow herd, resulting in these cows being dried off. A proportion of the affected cows exhibited weakness, projectile diarrhoea, red water, anaemia and rapid weight loss. Several cows have aborted. Four cows have died and other deaths are expected. Severe nephrosis and jaundice were noted on post-mortem examination.

Steer with MFC. Notice the ulcerated nasal plane, conjunctivitis and salivation.

Cow with zinc toxicity. Notice the emaciation and evidence of diarrhoea.

Inspection of the severely affected survivors showed emaciation, thick manure contamination of the back legs and tail with intermittent projective diarrhoea, very pale nasal mucous membranes, coronary band and teat skin and loss of pigment (reddening) from black hair over most of the body especially around the eyes ('spectacles' – typically associated with copper deficiency).

Clinical pathology showed on five severely affected survivors had elevated blood zinc levels (up to four times the high range of normal) three weeks after the zinc supplement had been removed. PCVs ranged from 20% to 28%. Compared to testing performed 19 days earlier, liver enzymes were now elevated in three of the five cows, calcium levels had increased compared to phosphorus and were now normal (previous Ca:P < 1 and calcium concentrations < 2mmol/l) and kidney enzymes were normal (previously elevated).

There are very few references on zinc toxicity in cattle and certainly not on the scale observed in this herd. Zinc excess interferes with the transport of copper, calcium and iron from the gut and zinc deposition in organs results in impairment of function. Elevated blood zinc levels have been reported for six weeks or more after removal of toxic levels. Haemolytic anaemia, scouring, abortion and depression have been described previously. Observations on this herd are continuing, especially on cow survival, reproductive performance and milk production in affected cows that were not dried off.

For further information contact Keith Hart, DV Mossvale RLPB on

Type 1 pneumocyte toxicity. Affected lung

Paralysis ticks

There were increased reports during January of losses from paralysis ticks (*Ixodes holocyclus*) in a number of areas in the north-east of New South Wales. A quick survey of producers suggested deaths of around 20% attributed to paralysis ticks in young calves early in the season on some properties.

These losses are suspected to be associated with the fact that some country is no longer burnt, the de-registration of Bayticol Pouron® and the fact that the dry conditions have ended. The return of normal high numbers of paralysis ticks in these areas coincided with calving, susceptible young cattle with no prior exposure to ticks and producers not adapting to use the remaining registered products.

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

Botulism in dairy cows

Botulism was suspected as the cause of paralysis and death in two out of 34 heifers in Wagga RLPB during February. The second animal was examined and it had the classical "frog leg" posture and the tongue was paralysed. Examination of serum was negative to *Clostridium botulinum* toxin types C and D. Hungerford's Diseases of Livestock 9th Edition refers to type B toxin as causing problems in NSW, but apparently we do not have access to a test for this strain. Overseas up to seven strains are recognised. Vaccine availability in Australia is limited to types C and D.

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

Vibriosis

Vibriosis (*Campylobacter fetus* subsp. *venerealis*) was confirmed in a cattle herd in the Wagga RLPB district during March. The disease was initially suspected when pregnancy testing by a private practitioner on a neighbouring property revealed an excessive number of non-pregnant cows. The practitioner confirmed vibriosis. The owner of the original herd realised his neighbour's bull had gotten in; the neighbour was informed that it was likely he also had a problem and a sampling kit was obtained. Testing revealed 3 positive, 5 inconclusive and 2 negative results, so the infection was well established.

Vibriosis can be easily prevented by regular vaccination of bulls. This should be a routine management procedure in beef herds.

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

Pneumonia in sheep

A number of pneumonia-causing scenarios were identified in the southern slopes region during January and February. In the Hume RLPB, *Mannheimia haemolytica* occurred as a secondary or tertiary disease in Merino weaners suffering from a combination of heat stress and hypoproteinaemia due to deterioration in pasture quality. These animals are also more susceptible to internal parasitism, which further predisposes to pneumonia. On one property 50 out of 350 weaners died.

Severe purulent *Pasteurella multocida* pneumonia was diagnosed in 6-month-old crossbred weaners in the Wagga Wagga RLPB district. Losses started after shearing, 4 weeks previously. Thirty out of 540 were affected, with 15 dying. Post-mortem showed extensive pleuropneumonia with the cranioventral lobes most severely affected. Also in the Wagga RLPB district, primary *M haemolytica* pneumonia in cross bred sheep on supplementary feed or lucerne paddocks was reported. One property has experienced ongoing deaths in young rams (6 out of 80). Close contact around feed or water troughs is the likely means of transmission.

An interesting case of type 1 pneumocyte toxicity (acute pulmonary emphysema and oedema) in sheep grazing legumes was investigated in the Wagga RLPB district. Five out of 350 cross-bred weaners died. Potential toxic pasture on this property was fodder rape or lucerne, but grazing history incriminated lucerne as the likely source.

For further information contact Sarah Robson, NSW DPI on (02)6938 1967.

Hyperthermia and dehydration during January

One of the hottest Januarys on record took its toll on livestock. Exhaustion and death in a mob of 9-month-old Hereford cattle (5 out of 120) occurred soon after their arrival on a property in the Riverina RLPB district. The animals had experienced 6 days of handling through saleyards, road transport, then yarding and paddock change on the new property. Affected animals displayed decreased exercise tolerance and respiratory distress. Histopathology suggested cardiovascular/pulmonary collapse consistent with hyperthermia and dehydration.

Also in the southern slopes region, 30-month-old feedlot steers destined for the Japanese and Korean market suffered from hyperthermia. Clinical signs included open mouthed laboured breathing and oedema of the distal limbs. Gross post mortem and histological findings included severe congestion and oedema of the lungs, epicardial haemorrhages, congestion of the trachea, bronchus and small intestine.

Reports of sow deaths due to excessively hot weather were received from an intensive piggery despite diligent cooling efforts.

Pimelea Toxicity

A 3-month-old male Santa Gertrudis calf was diagnosed with Pimelea toxicity in the Bourke RLPB in March. This calf was the second affected calf in one week in a herd of 47 cows and calves, which were all in good condition and had been grazing in the paddock for 12 months. Pasture species were predominantly copperburr (Chenopodiaceae), trefoil (*Lotus* spp), clover, spear grass (*Stipa* spp) and wire grass (*Aristida* spp).

Pronounced ventral oedema in a calf with Pimelea toxicity

The calves presented with pronounced ventral oedema extending from under the jaw along the entire ventral midline and prepuce. Both calves were standing but in respiratory distress. Post mortem revealed extensive subcutaneous oedema, a pale swollen liver, profuse serosanguinous transudate in the chest cavity and disintegrating lungs. Histopathology confirmed Pimelea toxicity due to characteristic changes in the liver described as "hepatic phlebectatic peliosis".

Pimelea toxicity is caused by the toxin simplexin which affects cattle after ingestion or inhalation of green or dried fragments of Desert Rice Flower (*Pimelea simplex*). To date the property owner has not located any plant material in the paddock.

The remaining calves have been moved. There have been no further cases in either the cows or the calves.

For further information contact Charlotte Cavanagh, NSW DPI on (02) 6872 2077.

NOTIFIABLE DISEASES

Anthrax

There were two anthrax incidents confirmed during the quarter. Both occurred on Narrandera district properties. The first occurred in early January, and involved the death of four out of 60 beef cattle. The animals had been grazing an oat crop that was too sparse to harvest. The second incident involved one group of animals that were moved between two properties, unrelated to the first incident. A total of nine out of about 90 beef cattle and one of nine goats died.

Both incidents were managed in accordance with New South Wales Department of Primary Industries anthrax policy. The properties were placed in quarantine, carcases were burnt on site and all at-risk stock were vaccinated. No stock movements from affected properties had occurred, other than the movement of animals between the two involved properties in the second incident.

Anthrax was excluded as the cause of death on six occasions during the quarter. Three of these involved sheep, including those on one property where anthrax had been diagnosed in the distant past and another where sheep had been moved from an anthrax affected property at Condobolin, (reported in NSW

Animal Health Surveillance Number 2005/4). Three investigations involved deaths in cattle, including the death of an animal vaccinated following an anthrax incident in the Murray district in December (NSW AHS 2005/4). No alternate diagnoses were found for any of these investigations.

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

Hendravirus exclusion

In February a private practitioner in Maclean NSW investigated the sudden death of a horse. The owner found the horse dead at 7pm. When last observed 4 hours previously the horse appeared in a normal state of health. A post mortem was performed the following day, and despite advanced autolysis of tissues, gross findings indicated respiratory disease.

Samples were sent to AAHL and Hendra virus was excluded.

For further information contact Sarah Robson, NSW DPI on (02) 6938 1967.

DISEASE SURVEILLANCE AND CONTROL PROGRAMS

Footrot

The NSW Footrot Strategic Plan continues to progress such that over 93% of the State is now gazetted as a Protected Area for footrot. Statistics received from Rural Lands Protection Boards indicate that as of 31 December 2005 there were 128 flocks in quarantine for footrot. This figure is similar to the number of quarantines six months previously (129 at end of June 2005) and largely reflects the good seasonal conditions during spring favouring the expression of footrot in many sheep raising areas of New South Wales.

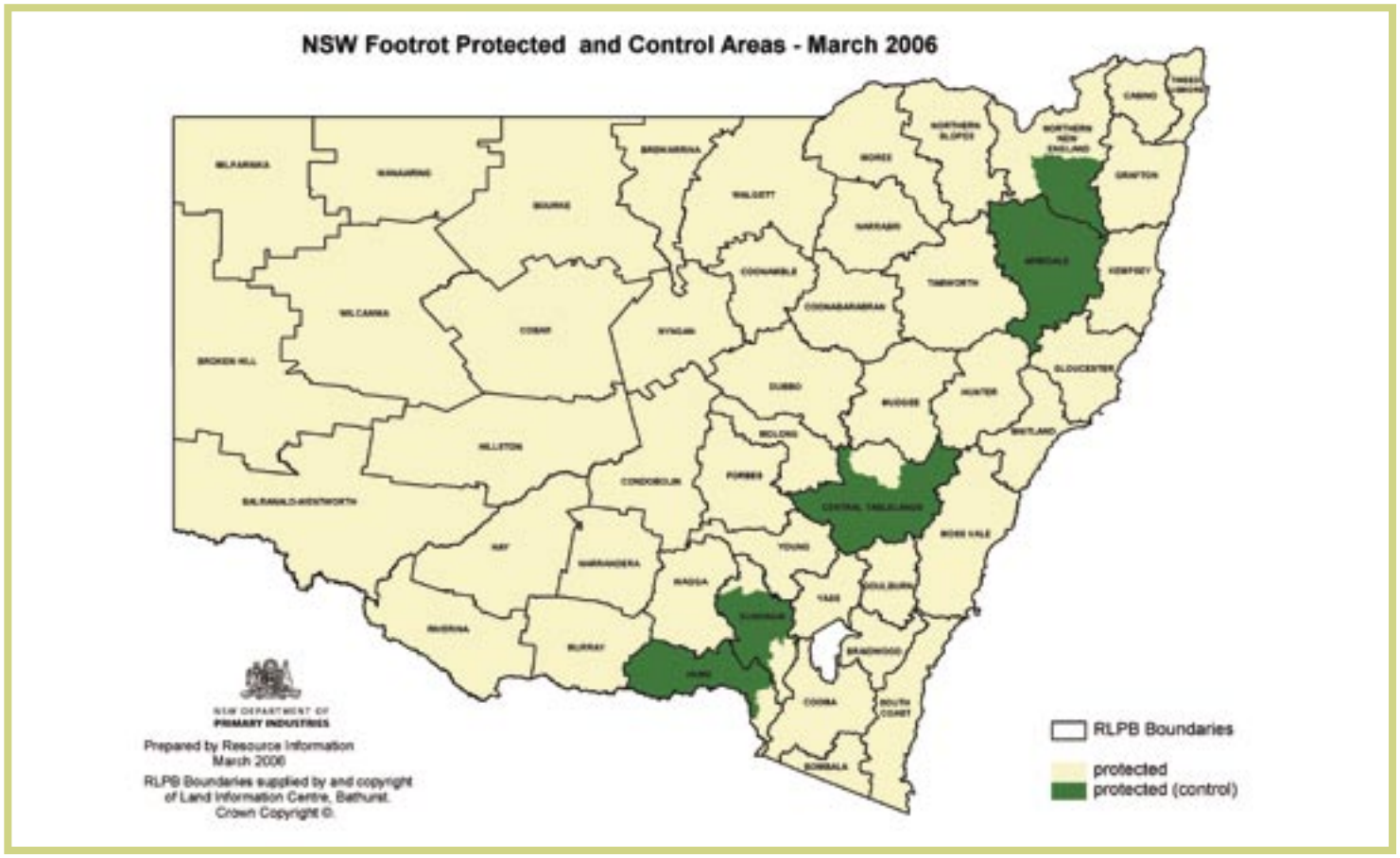
Braidwood RLPB is now a declared footrot Protected Area following support and endorsement of its application for a status upgrade. This reflects the hard work conducted by the Board with its ratepayers in managing ovine footrot in its district and opens up improved trading opportunities for the Board's producers.

This means there is now only one whole Board (Armidale) and parts of 4 other Boards (Northern New England, Central Tablelands, Gundagai and Hume) still remaining as footrot Control Areas. As of 31 December 2005 the highest flock prevalence for footrot in any Board was 2.28% in Central Tablelands while in other Boards with Control Areas the prevalence is approaching 1%.

A review of the Annual Footrot Returns for 2005 indicated many Boards were still receiving calls for lameness investigations with 404 investigations undertaken across 28 Boards. This indicates producers are concerned about lameness problems in sheep and readily seek advice to have the problem investigated. Of the 59 new footrot quarantines imposed in 2005 over half (30) were the result of owner notification requesting veterinary investigation. The Annual Footrot Returns also indicate the majority of Boards are undertaking some form of regular publicity to remind producers of the problems with footrot. On the downside the Annual Footrot Returns have indicated that Boards need to give more priority to tracing for footrot and breach investigations.

A new policy on Release from Footrot Quarantine was released in March 2006. State Council's Animal Health Committee has established a review of the role of RLPBs in the delivery of the NSW Footrot Program. RLPBs contribute the majority of resources to the Program. The Program in NSW will reach the objective set in 1988, that the entire state will have Protected Area status. The purpose of the review is to allow boards to consider the challenges facing footrot control in the future in order to establish a position on the future objective and management structure of the program.

For further information contact John Seaman, NSW DPI on (02) 6391 3248.



Cattle Tick

During the quarter 34 cattle tick infestations were detected. Of these 20% were detected by saleyard and abattoir surveillance and 20% by owner reports. The remainder were detected by herd inspections traced from the index cases. The 20% owner reporting would be the highest level reached to date.

Tracing continues for movements from an on-property sale in August 2005 from an infestation detected in February 2006. Most of the animals traced so far have resulted in new infestations being detected even though most purchases were single animals. These results demonstrate that movements during the winter have to be considered a greater risk than in the past. The milder winters of recent times are allowing ticks to cycle throughout the year east of the Richmond Range. Past experience has demonstrated that the winters on the Northern Tablelands are not severe enough to reliably eliminate infestations.

For further information contact Peter McGregor, NSW DPI on (02) 6626 1334.

Bovine Johne's Disease

BJD Infected herds in NSW at 31.3.2006

RLPB	Dairy	Beef	Total
Casino	16	15	31
Coonamble		1*	1
Forbes	1		1
Grafton	1		1
Hume	3	1	4
Hunter	1		1
Kempsey	4		4
Maitland	2	1	3
Molong		1	1
Moss Vale	2		2
Murray	11	1	12
Northern New England		1	1
Riverina	10		10
South Coast	13	2	15
Tweed Lismore	14	13	27
Total	78	36	114
* Infection is in dairy heifers being grown out on a beef property			

Johne's Disease MAP status of NSW herds and flocks for March 2006

	MN1	MN1-V*	MN2	MN2-V*	MN3	MN3-V*	Total
Alpaca MAP	7	-	19	-	83	-	101
Cattle MAP	141	-	213	-	308	-	662
Goat MAP	14	-	19	-	8	-	41
Sheep MAP	58	18	67	22	204	19	388

* V = vaccinated with Gudair vaccine (sheep MAP only)

Ovine Johne's Disease (OJD)

Abattoir monitoring for OJD recommenced at Dubbo Abattoir (Fletchers International) and at Goulburn Abattoir (Southern Meats). Monitoring at these two abattoirs had ceased from 7th October 2005 following a dispute with abattoir management over a range of issues including NLIS tagging exemptions for sheep sold directly for slaughter, the collection of the OJD Transaction Levy by abattoirs and the value of continued OJD monitoring.

Surveillance now includes monitoring for a range of "other disease conditions" causing significant economic impact to the abattoirs and to producers, namely intestinal damage by *Oesophagostomum sp*, liver fluke, sheep measles, pneumonia/pleurisy, and hydatids.

This is an important demonstration of the value of the NLIS system in sheep in providing disease traceability while also providing regional information on disease prevalence. Direct feedback to producers will enable improved management and will be of direct benefit to the industry by ensuring a reliable supply of healthy sheep.

For further information contact Ian Links, NSW DPI on (02) 6938 1992.

Enzootic Bovine Leucosis

The EBL status for NSW as at 31st December 2005 is tabled below.

Monitored free	995	(95.9%) herds
Provisionally clear	1	(0.1%) herds
BMT negative	15	(1.5%) herds
Not assessed	26	(2.5%) herds
Total	1037	(100%) herds

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

Transmissible Spongiform Encephalopathy

TSE surveillance submissions by RLPB 1.1.2006 to 31.3.2006

RLPB	DV sheep	DV cattle	Abattoir sheep	Abattoir Cattle	Private vet sheep	Private vet cattle	Total sheep	Total cattle
Armidale	2						2	
Braidwood		1						1
Cooma	1					1	1	1
Forbes	1						1	
Gundagai		1				1		2
Hume					1	1	1	1
Maitland	1						1	
Molong	1					1	1	1
Mudgee-Merriwa		1				1		2
Narrabri	2						2	
Riverina	1	1				2	1	3
Tamworth		1				1		1
Walgett	2						2	
Total	11	5	0	0	1	8	12	13

All samples were TSE negative.

Continuing submissions to the National Transmissible Spongiform Encephalopathy Surveillance Program are encouraged. Cattle over 30 months and sheep over 18 months which exhibit neurological symptoms are eligible for sampling under the program.

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

Porch Zoo: Spot the biosecurity risk! Photo taken in the Mossvale RLPB district by Diane Ryan

Disclaimer

The information contained in this publication is based on knowledge and understanding at the time of writing (March 2006). 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.

Getting Information on Animal Diseases

This surveillance report can only convey a very limited amount of information about the occurence 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 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

Prepared by:

Barbara Moloney
Technical Specialist, Disease Surveillance and Risk Management
Locked Bag 21, Orange NSW 2800

Phone (02) 6391 3687 or fax (02) 6361 9976
e-mail: barbara. moloney@dpi.nsw.gov.au

and

Sarah Robson
Regional Animal Health Leader , Wagga Wagga Agricultural Institute,
Wagga Wagga NSW 2650

Phone (02) 6938 1967 or fax (02) 6938 1995
e-mail: sarah.robson@dpi.nsw.gov.au

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

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