



ANIMAL HEALTH SURVEILLANCE

July - September 1998

Number 98/3

STAFF

Robert Pottie, a 1997 Sydney Graduate started duty at Orange RVL on 31 August in a temporary position. Steve Ottaway has commenced duties as SFVO Grafton and Jeff Marshall was the successful applicant for SFVO, Orange, swapping from a laboratory based position to a field position.

Steve Dunn has returned from overseas and recommenced his position as SFVO Gunnedah. Bob Coverdale is acting SFVO Dubbo.

LIVESTOCK AND PASTORAL CONDITIONS

Seasonal Conditions

Widespread rainfall was received over most areas of New South Wales with valuable falls in much of the Western Division. The exception is the far south west corner and the far south east or Monaro which also missed out on significant rain.

Excessive falls again fell on the North-West Slopes and Plains, prolonging the widespread major to moderate flooding in the Lachlan, Bogan, Macquarie, Castlereah, Namoi, Gwydir, Barwon and Darling Rivers, as well as the Moonie, Narran, Bokhara, Culgoa, Warrego and Paroo Rivers which start in Queensland and

which flow into the Darling System. Of major concern is the duration of flooding, with some locations, such as Wee Waa and Walgett experiencing up to five peaks.

Flood relief operations have continued in the area from Wee Waa to Mungindi to Bourke with over 450 sorties for feeding or evacuating to safe areas more than 350,000 sheep and 105,000 cattle.

Narrabri Floods

Most damaging to stock health was that the floods were followed by regular rainfall that resulted in wet conditions persisting until late September.

Animal health problems reported in the acute flood phase included drowning during the initial flood peak and exposure during the period of cold wet weather of the last week of July.

Most problems developed after the flood peaks.

Sheep producers were worse affected by the wet conditions with pregnancy toxemia secondary to foot abscess very common.

Lambing in the saturated conditions lead to a large number of neonatal lamb deaths. There have been a number of reports of 25% marking, a

reduction on the 80-100% that would be expected with the good joining season.

Sheep have further suffered with the inability to take fly prevention measures (shearing crutching, jetting, etc) has lead to severe fly problems.

There have been sporadic severe outbreaks (eg 70 dead from 700) of Ostertagiosis in three to four month old lambs.

The wet weather has also produced large numbers of biting insects. With further wet conditions over summer predicted Ephemeral Fever may arrive earlier than the usual February-March. Some cases have already been reported from central Queensland and northern NSW.

Drought

Wentworth and the southern part of Broken Hill Rural Lands Protection Board had been declared for Exceptional Circumstances (EC) assistance.

The area had been granted EC status as a result of prolonged dry conditions since 1994 which were coupled with low commodity prices.

The Spring Review of existing Drought EC areas of Hay, Hillston, Balranald and Monaro B will be considered over the next month.

Contact: John Bowler, Orange on (02) 6391 3680.

QUARTERLY HIGHLIGHTS

Virulent Newcastle Disease

Virulent Newcastle Disease (ND) was confirmed in chickens in western Sydney during September 1998. This is the first case of virulent ND in Australia since the last outbreak was eradicated in 1932. Infection was subsequently confirmed on two additional properties, one in north-western Sydney and the other at Rylstone, about 160 km north-west of Sydney.

Containment and eradication were implemented generally in accordance with the Australian Veterinary Emergency Plan (AUSVETPLAN), and with the State Disaster Plan (DISPLAN) and State legislation.

It appears that the outbreaks resulted from the mutation of an endemic, lentogenic ND virus into a highly pathogenic virus of relatively low transmissibility on the first infected property.

Extensive tracing and surveillance on commercial poultry and wild birds has confirmed that the disease has been confined to these three infected flocks.

Contact: Evan Sergeant, Orange on (02) 6391 3687.

Equine Herpes Virus Abortions

There have been a number of isolated abortions due to Equine herpes reported in NSW.

- Warialda - diagnosed at Toowoomba Veterinary Laboratory. Five mares have aborted in past year.
- South Coast - Property with 80-90 mares. In one isolated group of 19 mares, 6 abortions from 12 foaled, 7 mares still to foal.
- Wagga - suspicious histopathology on membranes. No foal tissues supplied.

The cause of equine herpes abortion is EHV-1 which also causes respiratory signs. The other equine herpes virus, EHV-4, causes respiratory signs only. (The infection is also known as equine rhino-pneumonitis but this is a confusing title.)

Infection with EHV-1 produces a life-long infection with periods of reactivation of the virus. There has been some recent work on EHV which shows that foals as young as 30 days may become infected and that many infections occurs before the foals are 12 months old.

There are two methods by which abortion might occur:

- recrudescence of existing herpes latent state (stress induced?) or
- a new infection during pregnancy.

Herpes abortion represents a major risk, particularly on larger studs, because infection with the virus is quite widespread. Predicting or preventing abortions in carrier animals is not possible. However, after a single abortion it is important to try to limit the spread to uninfected mares in the stud.

The Australian Equine Veterinary Association (AEVA) has drafted a Code of Practice to control the spread of the disease which has been adopted by thoroughbred breeders groups.

There is a vaccine available against EHV-1 and EHV-4 but there is no claim that it protects against abortion.

Occurrence of EHV abortion is notifiable to NSW Agriculture (Rod Hoare, 02 4640 6308). The major reason for notification is that export shipments require that no EHV abortions have occurred on the property of origin. If EHV abortions are suspected, fresh foal and foetal membranes should be submitted to a Regional Veterinary Laboratory for diagnosis. If this is not possible, fixed and fresh foetal tissues (lung, thymus, liver & spleen) should be submitted.

Contact: Evan Sergeant, Orange on (02) 6391 3687.

Plague Locust

The Australian Plague Locust Commission (APLC) has advised that, as a result of egg-laying in the Coonamble area last autumn, THERE IS POTENTIAL FOR A MAJOR OUTBREAK. The excellent seasonal conditions will ensure that hatching locusts will have feed to mature and lay future generations or put down fat reserves for migration.

DISEASE TRENDS AND PREDICTIONS

The heavy rains and flooding are causing a variety of animal health problems, or may bring various problems. The first has been severe flystrike - in fact it could be considered a flywave in areas with heavy rain - basically the northern Boards of Bourke, Brewarrina, Cobar and Wilcannia. Graziers are responding with programs of jetting and crutching. Body strike is common in some areas. Some graziers are reporting strike into fresh shearing wounds, which is quite uncommon here. Some graziers are deferring mulesing to avoid both fly and post-mulesing arthritis. Vetrazin is being widely used. Some people are using mixtures of vetrazin and OPs to provide immediate cover and longer-term protection. Care is being taken to avoid residues in wool. Rams are particularly prone to head

strike at present, and are being inspected at least once a week. *Lucilia cuprina* is common.

No reports of post-mulesing arthritis - it is not known whether this reflects people adopting the program offered to prevent the disease, or because the disease risk is in fact lower than expected.

The risk of *Pimelea* poisoning is high throughout the north after good cool season rains this year. The disease (formerly called St George or Marree Disease or Bighead) occurs when cattle inhale or eat certain parts of the plant species *Pimelea* - the desert riceflower group. The plants are growing over a wide area. Some graziers may need to move cattle out of high risk paddocks or properties.

The floods in the Darling and very heavy rain in the northern areas near Queensland are producing growth of flat billy button - *Ixiolena brevicompta*. This plant causes muscle damage in sheep and cattle after some weeks of consuming the mature seed head, which is rich in oils and protein. The sheep and cattle start "button-picking" consuming large quantities of seed head as the pastures dry off.

There is some risk of floodplain staggers with the floods. This disease occurs after growth of quantities of a grass - blown grass, or *Agrostis avenacea*, whose seedheads have been infected with a bacteria carried to the seed head by soil nematodes. The disease is similar to annual ryegrass toxicity. It is seen most commonly in cattle, but sheep and goats can be affected. There is some evidence that kangaroos may be affected in small numbers.

Contact: Greg Curran, Cobar on (02) 6836 2108

Diazinon recall

Nufarm Animal Health has announced an urgent voluntary recall of Nufarm Buff-Fli-Di Insecticidal Concentrate (500mL and 5L) and Pharma-Chemical Diazinon 200 Insecticidal Concentrate (250mL, 500mL and 5L). Nufarm advises anyone who has purchased the products to contact the company and arrange collection of the container and contents.

Buff-Fli-Di was withdrawn from sale in August 1996 and Diazinon 200 was concurrently voluntarily recalled. As a result of recent instances of organophosphate poisoning of cattle, Nufarm has re-issued the recall in the interest of human and animal health and safety.

Internal Parasites - Sheep

Apart from the south west of the state, much of NSW received well above average rainfall during the quarter. An exceptional spring and significant worm activity seems assured. There have been sporadic worm problems (*Trichostrongylus* and *Ostertagia*) in the south of the state, but many flocks still have only low to moderate worm burdens, presumably because of the very dry summer and autumn. Clinical parasitism was more prevalent in the northern tablelands and northwest slopes. Worm burdens were usually mixed, but *Haemonchus* was often dominant, due in large part to the mild winter and wet conditions.

Anthelmintic resistance continues to be an important factor in worm control failures. Approximately 90% of NSW sheep farms have resistance to the benzimidazoles (BZ), 80% to the levamisole (LEV) group, and 60% to the combination (BZ+LEV) group. Resistance to the macrocyclic lactones (avermectins/milbemycins) is still uncommon, but resistant strains are being uncovered with increasing frequency. Closantel resistance is now quite prevalent in the north and north west of NSW and also south east Queensland.

Contact: Steve Love, Armidale on (02) 6773 7249

Anthrax

There were 6 anthrax investigations, 3 in sheep and 3 in cattle, carried out during the quarter, all with negative results.

Contact: Evan Sergeant, Orange on (02) 6391 3687

DISEASE CONTROL AND ADVISORY PROGRAMS

BJD Market Assurance Program

There are now 603 herds enrolled in the cattle MAP in NSW. Of these, 375 are MN1, 131 MN2 and 31 have a status of NA. The remaining 166 herds are awaiting results or for their approved vet to send the correct forms in to confirm their status. There have been 177 herds that have undergone second round testing with a total of 16,270 cattle. There have been 133 reactors in 94 herds in round one testing, and 14 reactors out of 11 herds in second round testing. The reactor rate remains at about 0.2%. Of the reactor herds, 83 have been resolved with 3 infected. The beef to dairy ratio of herds enrolled in the MAP remains steady at 70:30 (Beef:Dairy), of which 66% are studs.

Contact: Tim Jessep, Goulburn (02) 4823 0744

ASJD Market Assurance Program

By 6 October there were 210 flocks enrolled in the ASJDMAP. This is a large increase since 21 July when there were only 79 flocks. Of these flocks, 131 are Merinos, 3 Poll Merinos, 26 Poll Dorsets, 8 Border Leicester, 7 Texels, 3 Suffolks and 3 Crossbred flocks. The remaining flocks are all individual different British Breed Flocks. The main reason for the large increase in flocks enrolled in the program is that testing has been greatly subsidised by the Interim Surveillance Program (ISP). There have been a few flocks recently diagnosed with OJD while undergoing MAP testing. Generally there have been one or two reactors when animals are bled under option A, which have then been histologically positive.

One assured flock with a status of MN1 was found to be infected with OJD at the required annual post mortem of lower condition score sheep.

A training course was held for approved veterinarians in September and the next training course will be held early next year.

Contact: Catherine Fraser, Orange (02) 63913924

Ovine Brucellosis

There are 1481 flocks enrolled in the OB Accreditation scheme. The majority of flocks include 617 Merino, 258 Poll Dorset and 190 Border Leicester flocks. The number of flocks accredited remains steady, with roughly the same number of flocks entering and leaving the program.

Contact: Catherine Fraser, Orange (02)6391 3924

New South Wales Footrot Strategic Plan

Submissions for footrot culture this quarter were once again dominated by northern districts. A total of 99 submissions were made, almost double the same period last year, with 45 originating from Armidale, 10 from Tamworth and 4 from Narrabri, with the latter being part of an audit. Field Clinical Diagnosis (FCD) listed for all submissions was Benign (36), Virulent (37) and Not Footrot (23). Gelatin gel results showed Unstable (20), Stable (18), Stable & Unstable (18) and No growth (22). Of the 23 submissions with a field diagnosis of "Not Footrot" 5 samples were found to have *D.nodosus* (Stable - 4; Unstable - 1).

Ideal growing conditions in the latter part of the quarter saw the biggest foot abscess year for some time. Flooding and a general excess of rain in northern NSW caused management problems for lambing ewes and most operations were put back up to a month. In the south excellent pasture conditions (clover) were modified by periods of cold weather. Expression however should have been good enough in most areas with a likelihood of further improvement in the December quarter. The number of new cases of footrot is low at this point in time which is encouraging for the program and the amount of footbathing appears to have been scaled down in a significant reduction of on farm costs. Pity the sheep and wool industry can't capitalise on the lower level of disease.

A gap between the official strategy and dissenting views appears to have widened following activity in the New England and this is very disappointing. Misinformation and different interpretations of objective data are responsible.

The success of the Strategic Plan has not been diminished by this gap but it will require considerable work to regain the confidence of the industry in a small area of the state.

Contact Rob Walker, Wagga Wagga (02) 6923 0463.

Enzootic Bovine Leucosis

The July 1998 round of bulk milk testing (BMT) has detected 7 unexpected positive dairy herds - the EBL status of these herds have changed to infected. Before the test, 3 of the herds were monitored negative, one herd was tested negative, one herd BMT negative and 2 herds were non-assessed (they had been assembled in the last 12 months).

Table 1 summarises the results from the July, 1998 BMT testing

Table 1: July BMT results

Negative BMT	1694 herds	95.6%
Positive BMT	54 herds	3.0%
Not sampled	24 herds	1.4%
Total active dairies	1772 herds	100%

Table 2 compares EBL herd status in April 1998 and July 1998.

Table 2: EBL status for April and July 1998

EBL herd status	April 98	July 98
Accredited Free	4 (0.2%)	5 (0.3%)
Certified Free	1 (0.1%)	1 (0.1%)
Tested Negative	304 (16.9%)	336 (19.0%)
Monitored Negative	1063 (59.3%)	1048 (59.1%)
BMT Negative	99 (5.6%)	94 (5.3%)
Provisionally Clear	88 (4.9%)	91 (5.1%)
Infected	209 (11.6%)	167 (9.4%)
Not Assessed	24 (1.3%)	26 (1.5%)
Total	1794 (100%)	1772 (100%)

Contact Richard Zelski, Maitland (02) 4930 2419.

Cattle tick control program

Infestations - A tick infestation was detected at Coraki, near Tweed Heads, in mid-August, which is unusual for this time of year. It seems that cattle ticks are still hatching on the pasture due to the mild winter.

Suspect amitraz resistance - A second case of suspected amitraz resistance has been detected - the first case west of the Richmond Range. Resistance is suspected on the basis of the larval packet test but has not been confirmed by laboratory tests on cattle. The CSIRO, Long Pocket, is undertaking further investigations.
Contact: Peter McGregor, Wollongbar (02) 6626 1334.

DISEASE SURVEILLANCE

Ovine Johne's Disease Surveillance

On 31 July 1998, a meeting of State and Federal Ministers of Agriculture (ARMCANZ) endorsed the National Ovine Johne's Disease Control and Evaluation Program with a budget of \$40 million over 6 years. Testing under the Interim Surveillance Program will continue and will lead to surveillance testing under the six-year program. Funding for the ongoing program is still being negotiated.

As of 30 September there are 345 infected (IN) properties, 333 Suspect (SU) properties and 477 under surveillance (US) in NSW. This is compared to June, 1997, when there were 156 IN, 89 SU and 9 US properties. The large increase is mostly due to the increased level of tracing and surveillance that has been undertaken under the Interim Surveillance Program (ISP). This increased level of tracing and surveillance is being continued. The increase in US flocks is a result of a policy change, so that neighbours to infected properties are now given the status of under surveillance.

Contact: Maurie Ryan, Orange (02) 6391 3964.

Transmissible Spongiform Encephalopathy (TSE) surveillance

During the last quarter, TSEs were excluded by histological examination of brains from 32 cattle, 21 sheep and 1 goat. A further two samples (1 cattle and 1 sheep) were unsuitable for examination.

Submission of samples from eligible cases has increased since the introduction of the program. The expected introduction of incentive payments for producers and veterinarians should further

increase the effectiveness of this program. The annual target for NSW, to comply with OIE requirements, is about 100 cattle brains and 150 sheep brains. The achievement of this target will require good cooperation by producers and veterinarians to ensure eligible animals are tested.

Two training workshops for veterinarians were held during the quarter, with a further three planned for during November.

Bat viruses

During the quarter, 3 fruit bats and 1 micro-bat were examined for evidence of lyssavirus, infection with negative results. A total of 169 fruit bats and 40 micro bats have now been examined in NSW, with 10 fruit bats being infected.

Contact: Evan Sergeant, Orange on (02) 6391 3687.

Arbovirus Monitoring

Results of sentinel herd monitoring for the 1997/98 season are summarised in the maps that follow. The main features were the widespread transmission of Akabane virus throughout the endemic area and just beyond the margins, bluetongue virus activity on the mid-north and far north coast and the apparent absence of bovine ephemeral fever virus. There was complete agreement between the predicted distribution of *Culicoides brevitarsis*, the actual distribution determined by vector monitoring and the distribution of the *Culicoides*-borne viruses such as Akabane.

Akabane virus

The Akabane results are not unexpected with the more favourable rainfall patterns during last summer and autumn, combined with the mild autumn temperatures. The virus moved to the full extent of its normal range and then beyond, to the extremities of the coastal strip, south as far as Nowra, throughout the Hunter Valley, along the eastern fringe of the northern Tablelands, including the Tenterfield district and also the Merriwa and Mudgee districts (See map).

Because of this extensive spread, combined with reduced transmission of the virus in many areas in the previous year, many pregnant cows that were not immune to the virus have been infected.

In some herds there have been moderate losses of calves with arthrogryposis, and currently calves are being born with hydranecephaly.

Unfortunately, Akabane vaccine is no longer available commercially in Australia so little can be done to prevent these losses in winter-spring calving cows.

Bluetongue

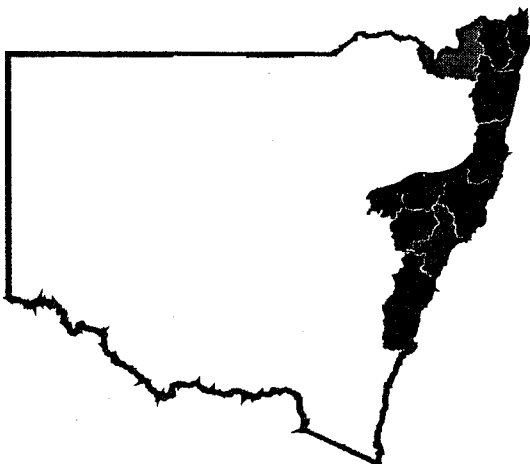
Transmission of bluetongue virus was recorded at sites along the entire north and mid-north coast, south to Taree. Infection was limited to Serotype 21. This is the first occasion that Type 21 has been found in NSW for about 10 years, and it has not previously been spread as extensively.

About 15 isolates of bluetongue virus were obtained from sentinel cattle bloods and have been sent to AAHL for molecular characterisation. There is evidence of genetically variant viruses circulating in Australia and this year's isolates will be compared with those from previous years and from the Northern Territory. The pathogenicity of this strain of Type 21 for sheep is not known because "wild" type virus has not previously been available for study. However, archival isolates with limited passage in cell culture (which causes rapid attenuation) appear to be non-pathogenic in sheep.

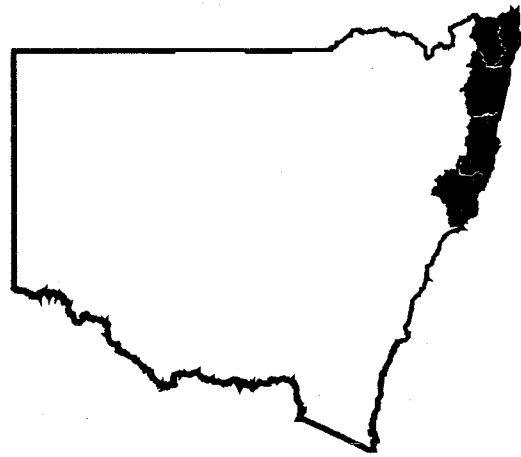
Ephemeral Fever

In contrast to the other viruses, there was no evidence of spread of Bovine Ephemeral Fever virus this year and no cases of ephemeral fever (3 Day Sickness). Unlike Akabane and Bluetongue viruses, BEF virus is spread by mosquitoes, rather than biting midges (sandflies). It is possible that there may be more cases in the coming year, especially after high rainfall and flooding in many parts inland NSW.

Distribution of Akabane Virus: 1998.



Distribution of Bluetongue Virus: 1998.



Contact: Peter Kirkland, (02) 4640 6331

Exotic Disease Investigations

Table 3 lists all reported exotic disease investigations during the quarter. This list only contains reported events. Numerous field and laboratory investigations are performed each year for possible exotic diseases. In most cases, exotic diseases are excluded early in the investigation and the case is not reported as such.

The one human case of brucellosis due to *Br melitensis* was in a person recently returned from an overseas country where the disease is endemic. A detailed report on the Newcastle disease outbreak is provided elsewhere in this issue.

Table 3: Suspect exotic disease investigations

Animal	Disease Suspected	Diagnosis
Sheep	Bluetongue	Photo-sensitization
Human	<i>Br. melitensis</i>	Confirmed
Poultry	Avian influenza	Negative
Poultry	Newcastle disease	Confirmed

Bee Diseases

Table 4 shows the results of American foul brood (AFB) testing for the current quarter, compared to the same period last year. The reduced level of testing this year is due to a reduction in the number of honey survey tests, and a reduced amount of regulatory testing.

Table 4: AFB testing summary for New South Wales

	July September, 1998	July September, 1997
Positive	44	152
Negative	71	167
Total	115	319

Of the 44 positive reports, 29 were new cases, while the remaining 15 were repeat tests on previously confirmed cases. Eighteen of the new cases had positive reports during the 1997-8 year.

One report of chalkbrood was received during the quarter.

Contact Mick Rankmore, Gunnedah on (02) 6742 9274.

Laboratory submissions

Table 5 shows the throughput of submissions through the laboratory system since 1 July 1998, and Figure 1 shows the throughput of samples through the laboratory system since 1 January 1996. Over the period, accession numbers have declined slightly, while total sample numbers have increased. The dramatic increase in sample numbers during the last quarter is mainly due to the large volume of testing undertaken under the ovine Johne's disease interim surveillance program.

Contact: Evan Sergeant, Orange on (02) 6391 3687.

Figure 1: Laboratory throughput since 1996

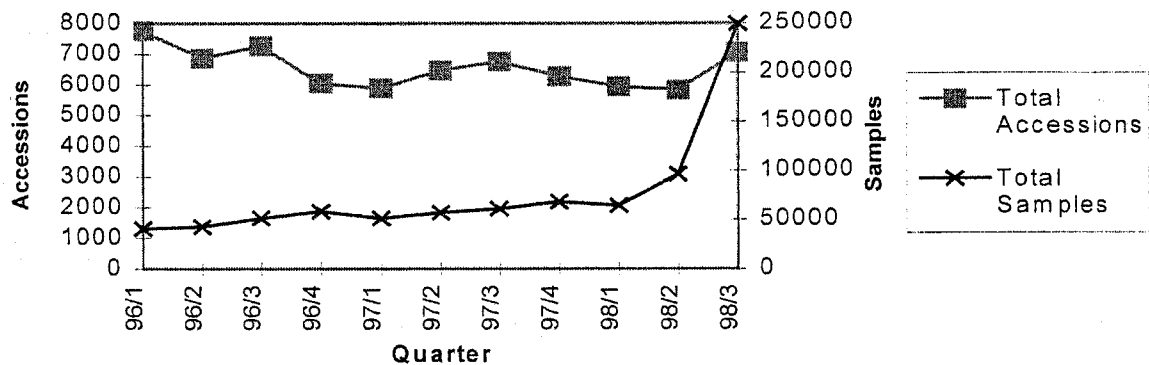


Table 5: Number of accessions to NSW Agriculture laboratories by species, July - September 1998

	SHP	CTL	PIG	GTS	AVN	HRS	FSH	BEE	D/C	O.SP	Total
Menangle	1487	1600	63	92	235	154	4	100	98	388	4221
Orange	1147	300	12	23	36	18	0	8	14	118	1676
Wollongbar	66	876	32	36	23	13	8	48	5	57	1164
All labs	2700	2776	107	151	294	185	12	156	117	563	7061

Getting Information on the Occurrence of 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 field veterinary officer; or Regional Veterinary Laboratory.

*For statewide information, contact NSW Agriculture's Quality Assurance Program
in Orange on (02) 6391 3237 or fax (02) 6361 9976.*

*For more information on national disease status check out the
National Animal Health Information System (NAHIS)
via the the Internet at:*

<http://www.brs.gov.au/aphb/aha>

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