



ANIMAL HEALTH SURVEILLANCE QUARTERLY

Newsletter of Australia's National Animal Health Information System

Volume 1

Quarterly Report for 1 October to 31 December 1996

Issue 4

Preface

This issue of *Animal Health Surveillance Quarterly* summarises the findings of disease surveillance and monitoring activities reported to the National Animal Health Information System (NAHIS) from 1 October to 31 December 1996. Summary data are collated from a variety of sources, including State Departments of Agriculture, the Australian Quarantine and Inspection Service (AQIS), the National Arbovirus Monitoring Program, the National Residue Survey, the Commonwealth Department of Health and Family Services, and various national reference laboratories. NAHIS records only summary information, and detailed data are maintained by the source organisations.

The information included in this report is accurate at the time of publication. However, because of the short reporting and production time, minor discrepancies may occur.

This issue includes a lead article on the Australian Quarantine Review (the 'Nairn Review'), an article on the newly recognised Australian bat lyssavirus, highlights of disease surveillance activities, items of interest from the States and Territories, and a

Contents

The Australian Quarantine Review	1
Australian bat lyssavirus	5
The National Task Force on Imported Fish and Fish Products	6
State and Territory reports	6
Exotic disease news	11
Quarterly statistics	12
NAHIS contributors	18

summary of quantitative data for the quarter. This issue is also available on the internet at <http://www.brs.gov.au/brs/aphb/aha>, the NAHIS worldwide web site .

I commend this report as a reference document and trust that you will find it useful.

GARDNER MURRAY
Australian Chief Veterinary Officer

The Australian Quarantine Review

In December 1995, the former Minister for Primary Industries and Energy, Senator the Hon. Bob Collins, initiated an independent review of Australia's animal and plant quarantine policies and programs. Continuing Government support for this decision was subsequently affirmed by the incoming Minister for Primary Industries and Energy, the Hon. John Anderson MP, following the general election in March 1996. The Australian Quarantine Review Committee was chaired by Emeritus Professor Malcolm Nairn, former Dean of the School of Veterinary Studies at Murdoch University and Vice-Chancellor of Northern Territory University from 1989 to 1996. Inevitably, the Committee became known as the 'Nairn Review', and its report (*Australian*

Quarantine: a shared responsibility) as the 'Nairn Report'. The report was presented to the Government at the end of October, and released publicly in December 1996. Government is currently framing its response to the report as part of the Budget process.

The Committee received a total of 167 written submissions and commissioned four independent reports into incursions of exotic pests and diseases of animals and plants over the past 25 years. The Committee undertook an extensive series of public hearings and private meetings in May and June 1996, and inspected quarantine operations in all States, including visits to the Cocos Islands Animal Quarantine Station and to the Torres Strait

region. In June and July 1996, the Committee made brief but comprehensive visits to five other countries to compare quarantine policy and operations. The Committee held discussions with government officials and relevant industry representatives in Canada, Japan, the Republic of Korea, New Zealand and the United States. The Committee was also able to hold discussions with officials of the European Union while they were visiting Canberra on other business.

The report recommends that the vision for quarantine be 'that Australia will maintain its relative freedom from unwanted pests and diseases while fulfilling national and international obligations in a responsible manner'. The report argues that some fundamental changes to Australia's quarantine policies and programs are needed:

- development of a partnership approach to quarantine policies and programs involving the general public, industry and governments;
- establishment of a statutory authority to develop national quarantine policy and ensure national delivery of quarantine services;
- establishment of a more balanced approach to animal and plant health and quarantine by providing additional inputs for plant health and quarantine;
- development of a more formally structured process for conducting risk analyses to provide a scientifically based foundation for a policy of manageable risk;
- acknowledgment of the importance of quarantine to the natural environment;
- expansion of the scope of quarantine by recognising the importance of activities in all three elements of quarantine — pre-border, border and post-border — as a continuum; and
- enhancement of the focus on pre-border and post-border activities in the achievement of Australia's quarantine goal.

The Importance of the Environment

Written and public submissions to the Review clearly indicated that both the general public and industry consider that maintaining a safe and clean natural environment is of fundamental importance. The report reflects this perspective by recommending that the goal of national quarantine should be 'to prevent the establishment and spread

within Australia of exotic pests and diseases that are deemed to have a significant deleterious effect on humans, animals, plants or the natural environment'.

Principles

The report argues that the following principles should guide Australian quarantine:

- programs should be national in their approach;
- objectives, formulation of policy and delivery within and between programs should be consistent;
- programs should be effectively coordinated to ensure objectives are met;
- programs should be transparent;
- effective consultation and communication are necessary to ensure community awareness and ownership of programs;
- programs should aim to maintain or improve the protection of Australia's human, animal and plant health status and its natural environment;
- programs should reflect Australia's national and international obligations.

The Continuum of Quarantine

The report views effective quarantine as a continuum reflecting a nationally coordinated system of surveillance, inspection and control using pre-border, border and post-border measures to prevent the establishment and spread of unwanted pests or diseases. It notes that activities under the three elements of the continuum of quarantine — pre-border, border and post-border — are addressed in different ways. Responsibility for protecting human, animal and plant health does not diminish once goods are quarantine-cleared at the border. The post-border element of the quarantine continuum has been performed primarily by State and Territory agencies, and the report notes that budget cuts have seen a number of States and Territories severely reduce their agricultural field and laboratory services. The report makes specific recommendations for increasing resources for monitoring and surveillance, and for preparedness and response.

Consultation

A common theme throughout written and public submissions to the review was concern regarding

a lack of meaningful consultation by AQIS. Effective consultation is an integral part of developing partnerships in quarantine and establishing community ownership. The report proposes the establishment of a register of relevant stakeholders representing the quarantine interests of the Australian community. This register would include national producer bodies (representing agriculture, aquaculture and forestry), national import bodies, State and Territory departments of agriculture, relevant Commonwealth agencies (e.g. the Australian Nature Conservation Agency), regional authorities (e.g. the Torres Strait Regional Authority), national conservation and environmental bodies, national consumer bodies, national peak scientific bodies in animal and plant health (e.g. the Australian Veterinary Association), national representative and advisory groups (e.g. the Australian Animal Health Council), national processor bodies (e.g. the Australian Food Council), and national service bodies (e.g. the Australian Chamber of Shipping).

Risk Analysis

Despite statements by previous reviews of quarantine and by AQIS itself, the review found a significant number of individuals and organisations still believe Australia has (or should have) a no risk quarantine policy. The report argues strongly against such a view, stressing that 'the continued perception in some quarters that there ever has been or ever can be a 'no risk' quarantine policy for any country — let alone a major agricultural trading nation such as Australia — reflects a fundamental misconception that needs to be corrected in an ongoing awareness campaign'.

Australia has applied risk analysis principles to decisions related to animal and plant quarantine for many years. Most recent attention has focused on their application to evaluating requests for access of imports to a country — import risk analysis. In the report, 'risk analysis' is used to encompass the elements of risk assessment, risk management and risk communication. The report examines the application of risk analysis to animal and plant quarantine and identifies several fundamental principles should apply:

Consultation: Risk analysis should be conducted in a framework that provides for early and broad consultation with all relevant stakeholders.

Scientific basis: Risk analysis should fundamentally be a scientific process. However, the report

acknowledges that risk management 'involves policy decisions based on a balance of scientific, social and economic considerations'.

Transparency: Risk analysis should be transparent and open. Details of the risk assessment undertaken and any risk management options examined should be readily available for both peer review and public scrutiny.

Consistency and harmonisation: Risk analysis should be consistent with both government policy and international obligations. It should take account of international standards, guidelines and recommendations so that it is harmonised as much as possible with international practice.

Subject to appeal on process: The process of risk analysis should be subject to appeal to ensure natural justice. The report proposes a consultative framework that by improving communication with stakeholders should limit the need for appeal on technical or scientific grounds but permit appeal on process.

Subject to periodic external review: The risk analysis process and associated decisions should be subject to periodic external review.

The report recommends that AQIS would advise registered stakeholders and the general public of the receipt of an import access request. AQIS would then undertake a preliminary evaluation to determine whether the request should be considered by in-house risk analysis or requires a more detailed risk analysis with broader external consultation.

AQIS would advise stakeholders of its preliminary evaluation, nominate its preferred process for undertaking the risk analysis, and ask for an indication of priority. If a majority of stakeholders agrees with the preferred process, then the risk analysis would be initiated. The report notes that a relatively small number of import risk analyses gain public and media attention because they are complex and controversial. It stresses that the vast majority of import access requests are routine and should be addressed by AQIS by a process of in-house risk analysis.

For in-house import risk analysis, AQIS would establish an in-house risk analysis team (IRAT) to develop a timetable, decide the risk analysis method it will use, and seek whatever external advice and consultation it deems necessary. This consultation would normally include discussion with the

applicant and relevant registered stakeholders, while proceeding with the risk analysis. It would also include the routine release of a discussion paper supporting the draft decision and (where an application is approved) the draft protocol governing the proposed import.

For those import access requests that do not fit the criteria for an in-house risk analysis and require a more detailed risk analysis by scientific experts, AQIS would coordinate and chair a Risk Analysis Panel (RAP). Each RAP would comprise a core of two government members with experience and expertise in quarantine risk analysis plus one to three external members with scientific expertise relevant to the import access request under consideration. Each RAP would:

- estimate the time needed to undertake its risk analysis;
- identify key stages in the analysis;
- determine and agree on the scope of the risk analysis, the scope of the scientific assessment required, the need for and scope of any other assessment required (economic, environmental etc.), and the analytical methods to be used; and
- prepare a preliminary evaluation as an issues paper.

Consultation would include circulation of the issues paper to relevant registered stakeholders. Before proceeding with its detailed risk analysis the RAP would seek agreement of relevant key stakeholders on the proposed scope, methods and timetable.

Where necessary, a RAP would appoint or contract expert Working Parties to complete specific components of a detailed risk analysis. RAP Working Parties would be usually convened and managed by an appropriate professional officer from one of the specialist Groups within the Commonwealth Department of Primary Industries and Energy (DPIE) — the Bureau of Resource Sciences or the Australian Bureau of Agricultural and Resource Economics for scientific and economic Working Parties, respectively. Having expert Working Parties chaired and managed by agencies external to AQIS should further ensure that each RAP's work is, and is seen to be, quite independent and scientifically based.

Each IRAT or RAP would assess risks associated with the import access request, and examine appropriate risk management strategies that might

be used to reduce the level of risk to a manageable level. Where such strategies are available, the IRAT or RAP would decide to permit the proposed import. In some cases, a RAP Working Party may determine that there are significant gaps in information that need to be filled by further research before it can make a scientifically based decision on a particular import access request. The RAP would consider contracting and funding necessary research or encouraging agencies fund such research.

Decisions on import access can affect areas considerably removed from the scientific or technical aspects of quarantine. The Review stresses that if a RAP considers that an appropriate risk management strategy can be applied to an import access request, it should advise DPIE, which would then be responsible for identifying any structural adjustment measures that might be required for affected industries, and liaising with other agencies such as the Department of Foreign Affairs and Trade concerning any international considerations that might arise from approving the request. If a RAP considers that an appropriate risk management strategy can not be applied to an import access request, DPIE would be responsible for liaising with other agencies such as the Department of Foreign Affairs and Trade concerning any international implications that might arise from not approving the request.

Other issues

The report identifies a number of issues relating to improving border controls, including increasing emphasis on monitoring and surveillance of ports and mail exchanges. It also proposes that current practices of aircraft disinsection and incineration of aircraft food waste be amended. In total, it makes 109 recommendations covering a wide range of topics related to animal and plant health and quarantine that provide a comprehensive blueprint for the future of such services in Australia.

The report is available on the internet via the NAHIS site (<http://www.brs.gov.au/aphb/aha>). Copies can also be obtained (free) from the DPIE Shopfront (order on-line through the NAHIS web site, or by telephoning Freecall 1800 020157).

Contributed by:

Mike Nunn

Bureau of Resource Sciences

Australian bat lyssavirus

A new virus — Australian bat lyssavirus (ABL) — has been identified in bats in Australia. The virus was found when rabies was included as a differential diagnosis for a case of encephalitis seen in a sick black flying fox at Ballina, New South Wales (NSW) in May 1996. Samples were sent to the Animal Research Institute, Brisbane, as part of a surveillance program for equine morbillivirus. A lyssavirus was isolated at the Australian Animal Health Laboratory (AAHL), Geelong. It was sent to the Centers for Disease Control (CDC), Atlanta, in the United States, for comparative studies and to determine whether current rabies vaccines were likely to protect against disease caused by this new virus.

Table 1: Species of bat from which ABL has been isolated

Scientific name	Common name
<i>Pteropus alecto</i>	black flying fox
<i>Pteropus poliocephalus</i>	grey-headed flying fox
<i>Pteropus scapulatus</i>	little red flying fox
<i>Saccolaimus flaviventris</i>	yellow-bellied sheath-tailed bat

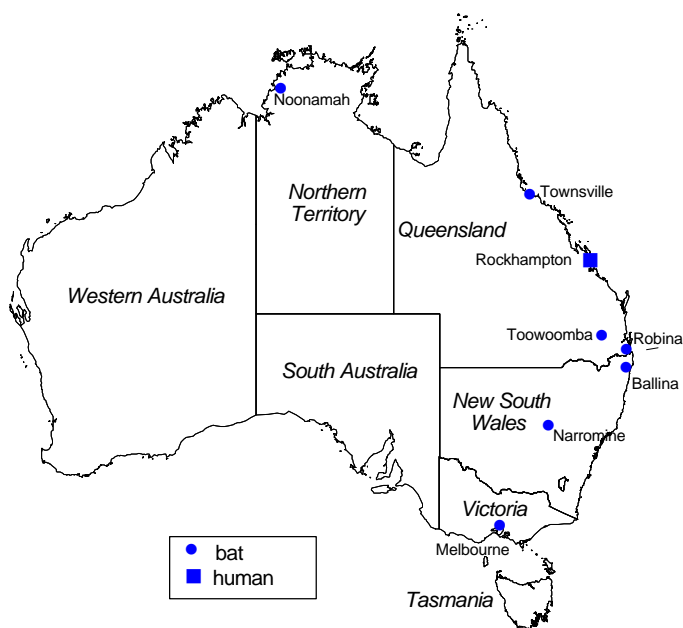
To date, ABL has been isolated only in Australia — from three of the four species of flying foxes (fruit-eating bats) and from one species of insectivorous bat (see Table 1). In November 1996, a woman wildlife carer in Queensland developed encephalitis and died after being bitten and scratched by a bat. Investigations and testing of stored samples suggest that the virus is widespread along the east coast of Australia and has been present since at least January 1995.

ABL has caused central nervous system signs in naturally acquired infections in bats and a human, and experimentally in mice. Studies have shown that this lyssavirus is related to, but distinct from, classical rabies virus. It varies from serogroup 1 (by approximately 8%) and from serogroup 5, and is thus considered a new genotype. CDC has advised that current veterinary and human rabies vaccines are fully cross-protective.

The new lyssavirus has now been isolated from fruit bats in Melbourne, Victoria and from Narromine in central NSW. This extends the known distribution of the virus from Townsville,

north Queensland, along the east coast as far as Melbourne and inland to Narromine, some 300 km north-west of Sydney (see Figure 1). [In January 1997, the virus was also confirmed in a sick bat from Noonamah, near Darwin.]

Figure 1: Locations of isolations of ABL



Surveillance of bats for the virus is being undertaken in all States and Territories of Australia. Surveillance is focused on bats showing illness. Retrospective investigation of stored bat tissues is also being undertaken to try to determine how long the virus has been present. Opportunities are being explored to undertake studies of bats for ABL in neighbouring countries.

A multidisciplinary Lyssavirus Expert Group has been established to coordinate the response to all ABL issues. The Group has developed protocols for prophylactic vaccination of high risk categories of people, such as bat carers, veterinary laboratory staff and wildlife officers, and for post-exposure treatment of people bitten or scratched by an infected or suspect infected bat. The Group is also coordinating diagnostic, surveillance and research programs on this issue.

The National Task Force on Imported Fish and Fish Products

In June 1995, the Commonwealth Government announced the formation of The National Task Force on Imported Fish and Fish Products to examine and report on a wide range of aspects to do with the import of fish and fish products.

The terms of reference were to address uses of imported aquatic animals and aquatic animal products in Australia, including health and quality, industry implications and environmental aspects. The Task Force's report also considered the recommendations of a 1995 Report of the Scientific Working Party on Aquatic Animal Quarantine.

In its final report, released in December 1996, the National Task Force advocated the adoption of a national approach to managing aquatic animal

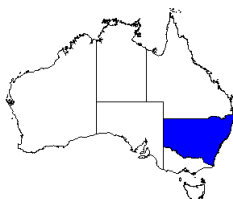
health, jointly developed by the Commonwealth, States and Territories, and industry. This approach will include:

- removal of legislative inconsistencies across States and Territories;
- development of a national list of notifiable diseases of aquatic animals;
- development of a national database of aquatic animal diseases;
- further development of arrangements for contingency plans and for the management of aquatic animal disease and pest outbreaks; and
- development of a long-term strategic plan to improve research and diagnostic services for the aquatic animal health sector.

State and Territory Reports

New South Wales

Contributed by:
Evan Sergeant
NSW Agriculture



Anthrax

Two anthrax outbreaks were recorded during the period — one in the Bourke area and one in the Hillston area. Both outbreaks involved only sheep.

NSW Footrot Strategic Plan

Weather and pasture conditions in spring and early summer over most of NSW were excellent, with above average pasture growth following good falls of rain in the south, together with mild to warm temperatures — an ideal period for the disease to be expressed. The number of properties under quarantine rose from 150 in the previous quarter to 162, with most of the increase occurring in the Riverina region. The flock prevalence within the 314 footrot groups (7922 flocks and 13.3 million sheep) was 5.4% in November.

Although the late harvest is expected to interfere with the start of summer footrot eradication

programs, field staff are optimistic that many of the latent properties have been identified and all have control programs in place. Following the closure of Wagga Regional Veterinary Laboratory, footrot culturing shifted to Orange RVL in September.

Bat lyssavirus

Surveillance for ABL detected four positive fruit bats in NSW, including one from archival material. One infected bat has now been identified in the Central Western region of the State, associated with human exposure.

Tick fever

During November, tick fever due to *Babesia bigemina* infection was diagnosed in one of 25 steers in the Tamworth area. These cattle had been transported from near Rockhampton, Queensland, five days previously, with appropriate tick treatments for entry to NSW. It appears that the infected animal may have had a latent or incubating infection that developed into clinical disease following the stress off transport. There was no evidence of spread of infection within NSW, nor of the introduction of the cattle tick vector.

Bovine Johne's Disease Market Assurance Program

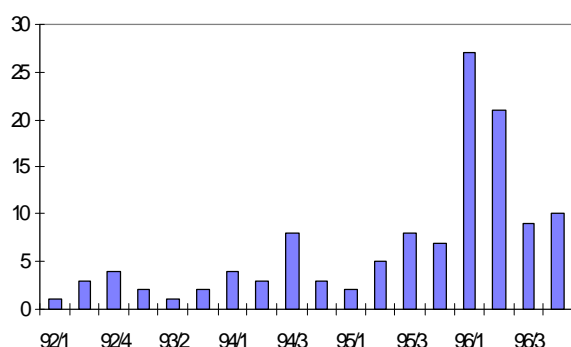
By early January 1997, 13 359 animals in 125 herds had been tested under the National Johne's Disease (JD) Market Assurance Program. Of these, 41 (0.3%) reactors have been detected in 31 herds. Seven of these herds have since been investigated and found to be negative. Of the 125 herds tested, 52 are now officially Tested Negative 1 status, 2 are Monitored Negative 1, 47 are awaiting notification of status, and 24 are still under investigation. Most of the assessed herds to date are beef rather than dairy herds.

Ovine Johne's disease

JD in sheep was first diagnosed in NSW in 1980. Since then, a total of 156 flocks have been confirmed as infected. Of these, 120 are still classified as infected and the remainder have either de-stocked or not had any reported cases for at least five years.

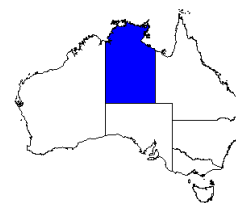
Detection rates for ovine JD have increased greatly over the past few years, particularly as a result of increased publicity about the disease in late 1995 and early 1996. The number of detections peaked in the first quarter of 1996, and has declined since (see Figure 2), with only nine new cases identified during the last quarter of 1996. Many of the more recently identified cases have been identified following tracing of sheep movements from known infected flocks, and infection in these flocks has been found only in recently introduced sheep.

Figure 2: New detection of ovine JD in flocks by quarter



Northern Territory

Contributed by:
Diana Pinch
NT DPIF



Bovine tuberculosis

Tuberculosis (TB) was confirmed in a herd of cattle in the Darwin region in early November from a sample submitted through the National Granuloma Submission Program. The lesion was submitted in August, and was classed as 'indeterminate' for TB at the time. Bacterial culture subsequently yielded *Mycobacterium bovis*. Destocking and TB testing will take place once the wet season finishes and allows access.

During 1996, 65 granulomas were submitted from Northern Territory abattoirs as part of the National Granuloma Submission Program. Five of these were tuberculous — four from buffalo (one herd) and one from cattle. From a further 20 granulomas from animals destocked for TB, 16 were tuberculous, all from the buffalo property.

Bovine ephemeral fever

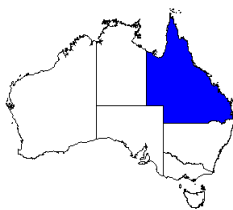
There were increased reports (both properties and cases) of bovine ephemeral fever from the Darwin and Katherine regions. This is often the case at this time of year, when vector activity increases with the onset of more humid and wetter weather. There were also several reports of dermatophilosis in young cattle in the Katherine region, following the first showers of rain.

Bat lyssavirus

Samples from 23 bats were tested for evidence of ABL during the quarter. Results received to date are negative for ABL. Species of bats sampled included megabats such as black flying foxes and little red flying foxes, and microbats such as a bentwing bat and a sheath-tailed bat. As a precautionary measure, staff working at the Berrimah Veterinary Laboratories who are likely to handle bats have been vaccinated against rabies to gain cross-protection to ABL. [In late January 1997, a sick little red flying-fox from Noonamah, near Darwin, tested positive for ABL.]

Queensland

Contributed by:
Peter Black
Queensland DPI



Bovine brucellosis investigation

A four-year-old cow sampled as part of structured surveillance activities gave a positive result to the complement fixation test in the third quarter of 1996. After post mortem examination of the animal, bacterial culture of lymph nodes did not yield *Brucella abortus*, and infection with *Brucella abortus* was excluded as the cause of the initial positive serological test result.

Clostridial diseases

Blackleg was diagnosed on four properties in the Banana Shire. Calves and weaners died with losses from 6–30 head per property. *Clostridium chauvoei* was isolated from the heart of one animal. On one property, there was sudden death with a high mortality rate, rapid decomposition of the carcass, and a bloody exudate oozing from all orifices. Anthrax was suspected, but was ruled out on the basis of laboratory tests.

Mortalities from botulism were recorded on a Nebo Shire property where bone chewing had been observed, and on another property in the Rockhampton area.

Bovine spongiform encephalopathy surveillance

Neurological conditions continue to be investigated as part of a targeted diagnostics project. Three cases investigated this quarter involved middle ear infections. On one property, *Actinobacillus pyogenes* had been isolated previously. The second case involved an emaciated feedlot steer and *A. pyogenes* was again isolated. The third case involved a cow with zygomycosis caused by *Saksenaea vasiformis*, a soil-borne fungus. Clinical signs in this case included the drooping of an ear, eyelid and lip on one side, with drooling of saliva and malalignment of the jaw. Degeneration and swelling of the cranial bones with damage to nervous tissue was noted on

detailed laboratory examination. No route of infection has been identified to date.

Urolithiasis

In Boulia Shire, 20 young brahman-cross steers aged 9–14 months, in a mob of 500, died as result of complications associated with urolithiasis. The steers had been running on dry pasture and had access to bore water only. They were treated with a growth promotant and provided with urea blocks. The animals presented with distended abdomens or swelling around the perineum and along the prepuce. Post mortem examination revealed calculi throughout the urinary tract.

Venereal strangles

Urethral cultures from a thoroughbred stallion yielded a pure growth of *Streptococcus equi*. Two mares subsequently served by the stallion developed *S. equi* metritis. Strangles is normally an upper respiratory tract infection in horses, although occasionally 'bastard' strangles can produce abscesses at other sites in the body. This venereal form of the infection is an unusual manifestation and mode of transmission of the disease.

Poultry mortalities

Infectious laryngotracheitis resulted in the death of 250–300 birds in a group of 5400 in a layer flock on the Gold Coast over a three week period during October–November. Movement restrictions were imposed, but were removed once mortality rates returned to normal during November.

Ichthyophthirius multifiliis in silver perch

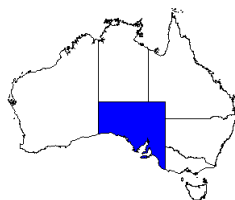
Ichthyophthirius multifiliis was diagnosed as the cause of a sudden fish kill in one tank of a commercial farm. The farm breeds and raises silver perch for live export to Japan. Some 80 000 fish were present on the farm and the kill involved 123 eighteen-month-old fish in one tank. Fish submitted for examination at the Toowoomba Veterinary Laboratory had hyperaemia of the skin which was noticeable on the tail and fins. The skin was covered with thick mucus that contained small white 'salt-like' granules. Samples revealed massive numbers of *Ichthyophthirius multifiliis*.

Bat lyssavirus

A yellow-bellied sheathed-tail bat was submitted to the Toowoomba Veterinary Laboratory after being found on the ground and apparently unable to fly. During transport to the laboratory, the bat aborted a full-term foetus. On post mortem examination, there were no significant abnormalities apart from a mild oedema of the pelvic fascia. Histological examination revealed a very mild meningoencephalitis. Brain impression smears were positive to lyssavirus using a fluorescent antibody test performed at AAHL.

South Australia

Contributed by:
Kim Critchley
Primary Industries SA



Unusual cattle deaths in the mid-north

During November, there were reports of a number of deaths in cattle in the Orroroo area of South Australia. Most were calves but some adults were also involved. The most common clinical signs were excess salivation, crusting around the nose, and scouring. Death ensued within a week of detection. A number of the properties involved reported the occurrence of a similar event the preceding year. Samples were received from field post mortem examinations as well as from four live animals submitted for post mortem examination at the Departmental laboratory. Pestivirus (mucosal disease) antigen was found in one animal, although polymerase chain reaction at AAHL was negative. Two animals had antibodies to bovine malignant catarrh. Unfortunately, the findings were not conclusive and plans have been put in place to further investigate the problem if it occurs again next year.

Positive Johne's disease serology in sheep

As a result of Western Australia's requirement for all sheep going to that State to be tested for JD, many sheep have now been tested. Two stud rams gave positive reactions to the agar gel immunodiffusion test. Both animals were slaughtered and post mortem examination showed no evidence of pathological change. No organisms

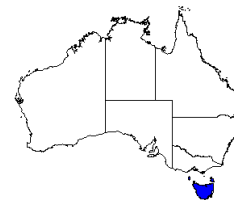
were detected on histopathological examination or by culture of a wide range of organs.

Apiaries Task Force

An Apiaries Task Force has been set up to implement the disease control and quality assurance program within the apicultural industry. The aim is for the industry eventually to take full responsibility for disease control, with the Department of Primary Industries providing policy advice to the Minister and maintaining liaison between the Minister and industry.

Tasmania

Contributed by:
John Elliot
DPIF, Tasmania

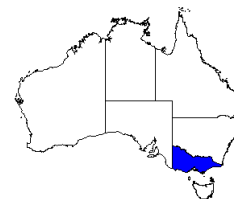


Hydatid disease

Two properties were investigated after hydatid cysts were found in stock traced to them. On one property, hydatid worms were found in a dog. This dog had come from the mainland two years previously. It is likely to have been infected before leaving the mainland. Until this detection, no infected dogs had been found in Tasmania for more than 10 years.

Victoria

Contributed by:
John Galvin
Agriculture Victoria



Anthrax outbreak in Victoria

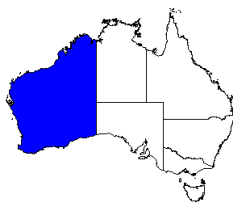
As this issue of *Animal Health Surveillance Quarterly* was being produced, a major outbreak of anthrax in dairy cattle was being controlled in the Goulburn Valley in central northern Victoria. As at 13 March 1997, 82 properties had been affected, with 198 cattle deaths and 3 sheep deaths. There had also been one human case, a knackery worker infected with the cutaneous form who has recovered uneventfully, following antibiotic therapy. Animals on a total of 198 properties had been vaccinated — 78 649 cattle and 2663 sheep. Anthrax is quite rare in Victoria, with the last case in that State being diagnosed in 1988. An outbreak

of this size is most unusual in Australia and detailed epidemiological investigations are under way. Further details will be provided in the next issue of *Animal Health Surveillance Quarterly*.

A copy of the information sent by the Australian Chief Veterinary Officer to the Office International des Epizooties concerning the outbreak can be found on the internet through the NAHIS site (<http://www.brs.gov.au/aphb/aha>).

Western Australia

Contributed by:
Richard Norris
Agriculture WA



Sheep

Allergic enteritis was seen in rams and seems to be an emerging disease of sheep. It is thought to be caused by a hypersensitivity reaction to ingested nematode larvae. *Stemodium kingii* was shown to cause rumenitis and omasitis in test-fed sheep, following anecdotal reports that it causes trouble on pastoral leases in the Pilbara. Cobalt-vitamin B12 deficiency occurred on several properties during the spring, and one case of white liver disease was also recorded. Photosensitisation occurred secondary to lesions of chronic lupinosis carried over from the previous autumn. An isolated case of eperythrozoonosis, with low mortality rate, was seen in lambs. An inanition syndrome in shedded rams had lesions suggesting a multifactorial aetiology. There were several cases of annual ryegrass toxicity (ARGT), enterotoxaemia and polioencephalomalacia. Rumenitis from acute grain overload was seen in feedlot sheep.

Cattle

Infectious bovine rhinotracheitis was again seen in cattle moved from the Kimberley to the south-west land division. Chronic fibrinous pneumonia with some resemblance to pleuropneumonia occurred in a south west steer. Enterohaemorrhagic *Escherichia coli* caused severe haemorrhagic enteritis and death in 10 of 4000 feedlot steers over two weeks. Calves with listerial

meningoencephalitis also had enteritis of unknown cause. Endocarditis and nephritis caused by *Actinomyces pyogenes* were responsible for a wasting syndrome in an adult steer.

Pigs

E. coli infection was the apparent cause of suppurative meningoencephalitis in piglets, and the bacterium was also isolated in pure culture from an aborted piglet. Glasser's disease (*Haemophilus* sp.) was the cause of 10 dead and 30 sick piglets in a group of 1200.

Poultry

Necrotic enteritis caused by *Clostridium* sp. was seen in adult birds and in meat chickens.

Miscellaneous species

A variety of diseases occurred in other species, including protein-losing enteropathy in a llama, chronic hepatitis in a bush possum, chronic stress in a leopard seal, and hepatitis in an orang utan. *Aspergillus* infection caused endocarditis in a crocodile and granulomatous myositis in an oblong tortoise. Red spot disease was seen in black bream collected from the Swan River. Elsewhere, black bream died with a destructive protozoal myositis.

Annual ryegrass toxicity

The wet winter and warm spring, together with increasing herbicide resistance problems, has resulted in excellent growth of ryegrass during 1996. A high proportion of pasture samples sent for testing for *Clavibacter toxicus*, the bacterium that causes ARGT, have been positive. Many reports of clinical ARGT were received from the northern and central parts of the ARGT risk area in Western Australia.

In the past two years there have been a number of cases of ARGT in sheep and cattle fed lupin fines. Lupin fines are the residues of harvested lupin crops and are an excellent feed for ruminants, often having 10–12% crude protein and being highly digestible. However, the harvesting system that collects these fines also collects ryegrass seed heads.

During the past two years an experimental antidote to ARGV has been tested in WA, although, because, of the small potential market and the equivocal results seen to date, future commercialisation remains uncertain. The CSIRO Division of Animal Health has developed an experimental vaccine against ARGV. The vaccine gave 100% protection to sheep in an experimental challenge while clinical disease developed in more than 50% of the unvaccinated sheep. Agriculture Western Australia will be testing this, and a second vaccine, in the Wongan Hills area over summer.

Vesicular disease investigation in camels

As part of the recent survey of Western Australian camelids for JD, officers from Agriculture Western Australia have made contact with many

owners of alpacas, llamas and camels throughout the State. This proved useful when a Wanneroo camel tourist operator reported that three of his younger camels had developed vesicular lesions around the muzzle and lips together with similar lesions on the hooves of one. Further questioning of the owner revealed that he had returned from a trip to Europe early that year. The case was investigated and although the clinical signs were in some ways similar to vesicular diseases, extensive testing of blood and tissue samples ruled out the possibility of an exotic disease.

Camelids are susceptible to a wide range of exotic diseases, including foot-and-mouth disease. However, the lesions seen in this case were most likely produced by contagious ecthyma, which has previously been recorded in camels in Australia.

Exotic Disease News

BSE Workshop

A national forum, organised by the office of the CVO considered the implications of international animal disease emergencies, using BSE as a case study. The participants included international experts, a broad spectrum of key industry representatives, government personnel from trade, health as well as primary industries and CSIRO.

The major tasks of the workshop included:

- to review the European emergency response to public and animal health concerns relating to BSE;
- to review global market responses, especially in Asia and North America
- to relate the worldwide impact of linking human disease to the outbreak of BSE and to identify the lessons to be learnt to other emergency situations.

A series of actions were formulated from the meeting to ensure the development of strategies to improve Australia's emergency preparedness and to maximise opportunities. One of the most important outcomes of the workshop was the overwhelming support for a coordinated approach by all relevant groups -government and industry - so an emergency can be addressed effectively and efficiently.

Incursion management

In the light of incidents in recent times (pilchard mortalities, papaya fruitfly), the previous government announced a review of contingency plans for dealing with outbreaks of exotic diseases or pests involving animals, plants or fish. The Minister at the time further suggested that the AUSVETPLAN model be considered as the framework for the non-animal industries.

This review has now been completed, with the recommendations now being considered by SCARM. The animal sub-committee of the task force have produced a report with sixty-two recommendations. They are generally aimed at refining the current arrangements. A key recommendation is to closely examine the current funding arrangements to cover a wider range of emergency situations and to investigate industry funding contributions. Other recommendations describe widening the scope to include plans to handle the most significant exotic terrestrial vertebrate pests and methods to improve the monitoring of, and surveillance for, diseases in wildlife.

Contributed by: Chris Bunn, Animal Diseases/Incidents Section, DPIE

Quarterly Disease Statistics

General surveillance

All animals at export establishments are inspected. Table 2 gives the throughput over the past 15 months.

Table 2: Animals inspected at export establishments

	Cattle	Calves	Sheep	Lambs	Pigs	Other domestic species	Feral pigs	Other feral
Oct - Dec 1995	1 355 706	80 161	2 975 120	1 740 705	590 877	179 909	43 793	101 774
Jan - Mar 1996	1 385 932	62 299	3 116 582	1 735 586	545 249	268 405	20 254	97 805
Apr - Jun 1996	1 424 305	81 307	2 570 637	1 755 863	578 826	118 468	46 675	91 136
Jul - Sep 1996	1 338 938	159 012	2 006 364	1 756 760	576 569	179 377	58 659	86 162
Oct - Dec 1996	1 315 722	71 153	2 705 503	1 779 745	572 133	180 315	38 839	113 297
NSW	479 542	48 947	1 247 019	892 584	356 004	123 963	3 749	82 178
NT	6 681	0	0	0	1 476	16	0	18
QLD	451 126	180	160 493	83 525	65 064	32 909	35 090	13 171
SA	74 760	0	554 488	285 584	11 824	13 774	0	41
TAS	35 948	1 701	11 717	3 772	0	0	0	0
VIC	202 536	20 013	343 480	283 219	100 224	864	0	0
WA	65 129	312	388 306	231 061	37 541	8 789	0	17 889

Laboratory testing

The results of serological testing from routine laboratory submissions for the quarter are shown in Table 3. As a result of the outbreak of anthrax mentioned earlier, normal quarterly reporting of diseases in Victoria has been postponed and some information from that State is not available for this issue.

Table 3: Serological testing from routine submissions to State and Territory laboratories

	Akabane		Bluetongue		Bovine ephemeral fever		Enzootic bovine leucosis		Equine infectious anaemia		Equine viral arteritis	
	Tests	+ve	Tests	+ve	Tests	+ve	Tests	+ve	Tests	+ve	Tests	+ve
Oct - Dec 95	502	94	4298	259	1094	223	5189	46	617	1	336	4
Jan - Mar 96	1035	381	5502	261	1662	538	1188	7	345	0	271	3
Apr - Jun 96	980	177	6521	404	1506	461	8918	46	313	1	172	1
Jul - Sep 96	519	97	10000	90	1155	335	7454	51	324	2	173	6
Oct - Dec 96	1009	210	9904	100	1331	481	3130	39	339	0	137	1
NSW	51	8	817	12	198	16	355	3	213	0	105	1
NT	189	103	318	5	181	92	587	13	8	0	0	0
QLD	316	87	6493	83	537	323	425	0	81	0	12	0
SA	158	0	1048	0	123	0	1736	23	10	0	0	0
TAS	3	0	35	0	0	0	0	0	0	0	0	0
VIC	0	0	0	0	0	0	0	0	0	0	0	0
WA	292	12	1193	0	292	50	27	0	27	0	20	0

Control activities

Tuberculosis

Table 4 summarises results of the National Granuloma Submission Program. In the quarter to 31 December 1144 granulomas were submitted, including two cases of TB in submissions collected in Western Australia.

Table 5 summarises the number of TB breakdowns that have occurred in herds during the past seven years

Table 4: Results of the National Granuloma Submission Program

	Stock Inspected	Granulomas Submitted	TB +ve
Oct - Dec 95	1 399 165	864	4
Jan - Mar 96	1 406 772	806	7
Apr - Jun 96	1 484 270	1005	0
Jul - Sep 96	1 497 812	1215	1
Oct - Dec 96	1 393 533	1144	2
NSW	535 137	254	0
NT	6 691	8	0
QLD	451 306	372	0
SA	74 760	88	0
TAS	37 649	111	0
VIC	222 549	98	0
WA	65 441	213	2

Table 5: TB breakdowns

	1990	1991	1992	1993	1994	1995	1996
NSW	1	0	1	0	0	1	0
NT	2	1	2	7	5	5	3
QLD	5	6	4	1	2	1	1
SA	0	0	1	0	0	0	1
TAS	0	0	0	0	0	0	0
VIC	0	2	1	0	0	1	1
WA	0	0	0	1	0	1	1
AUST	8	9	9	9	7	9	7

Bovine brucellosis

Although bovine brucellosis is now exotic to Australia, surveillance is maintained through abortion investigations and miscellaneous testing of cattle for export or other reasons. *Brucella abortus* has been excluded as the cause of the reactor found in the third quarter of 1996 (see Queensland's State report).

A total of 157 abortion investigations were performed during the reporting period — all with negative results for bovine brucellosis. The results of recent brucellosis surveillance are shown in Table 6.

Table 6: Surveillance for bovine brucellosis

	Abortion Investigations		Test for other reasons	
	Tests	+ve	Tests	+ve
Oct - Dec 95	134	0	2154	0
Jan - Mar 96	85	0	1416	0
Apr - Jun 96	196	0	5593	0
Jul - Sep 96	247	0	4227	1
Oct - Dec 96	157	0	4104	0
NSW	35	0	478	0
NT	0	0	708	0
QLD	52	0	2541	0
SA	0	0	270	0
TAS	1	0	57	0
VIC	0	0	0	0
WA	69	0	50	0

Ovine brucellosis

Accreditation programs for ovine brucellosis freedom are operating in most States. Table 7 shows the number of accredited flocks at the end of the quarter.

Table 7: Ovine brucellosis accredited free flocks at 31 December 1996

NSW	NT	QLD	SA	TAS	VIC	WA	AUST
1300	0	62	561	157	0	0	2080

Enzotic bovine leucosis

Enzootic bovine leucosis (EBL) accreditation programs have been operating in the dairy industries in Queensland and NSW for several years. Victoria, South Australia, Western Australia and Tasmania are all undertaking a program of bulk milk testing of all dairy herds.

Table 8: Dairy herds tested free of EBL at 31 December 1996

NSW	NT	QLD	SA	TAS	VIC	WA	AUST
1371	0	1480	8	718	0	455	4032

Table 8 shows the number of herds tested free of EBL at the end of the quarter.

Johne's disease

JD is seen primarily in dairy cattle. It occurs occasionally in beef cattle, sheep and dairy goats, and has been diagnosed in a small number of alpacas. JD occurs in NSW, Victoria, South Australia and NSW. Surveillance programs in Queensland, Western Australia and the Northern Territory beef herd support the view that they are free of JD, and active measures are taken to stamp-out any incursions. Table 9 shows the number of herds and flocks known or suspected to be infected.

Table 9: Herds/flocks with JD at 31 December 1996

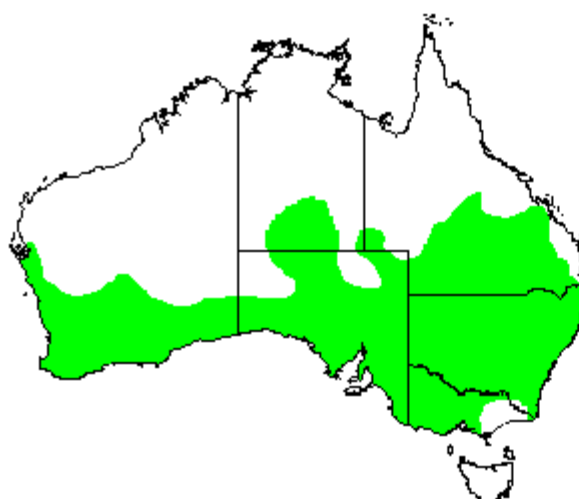
	Cattle	Sheep	Goats	Alpacas	Total
NSW	158	152	0	1	311
NT	1	0	0	0	1
QLD					free
SA	28	0	0	0	28
TAS	32	7	8	0	47
VIC	1611	19	0	6	1636
WA					free
AUST	1830	178	8	7	2023

Rabbit calicivirus

Following studies that reaffirmed its specificity for rabbits and allayed concerns regarding the potential for it to affect humans, rabbit calicivirus (RCV) was approved as a biological control agent for wild rabbits. The official release of RCV commenced in NSW on 9 October. The spread of RCV has varied considerably between different locations and studies are planned to monitor the effectiveness of RCV in controlling rabbits under different environmental conditions.

Figure 3 shows the probable extent of spread at 31 December, based on reports from various State and Territory vertebrate pest agencies.

Figure 3: The extent of RCV at 31 December



National Residue Survey

Table 10 summarises the results for the quarter for data collected by the National Residue Survey.

Contributed by: National Residue Survey, Bureau of Resource Sciences

Table 10: National Residue Survey, 1 October to 31 December 1996

Each pair of figures gives the number of samples tested and the number of samples above either the maximum residue limit or the maximum permitted concentration.

	NSW	NT	QLD	SA	TAS	VIC	WA	AUST
Antimicrobials								
Beef	142 0	5 0	99 0	31 0	9 0	83 0	24 1	393 1
Sheep	21 0	0 0	2 0	15 0	2 0	14 0	14 0	68 0
Pork	118 4	0 0	93 4	35 1	3 0	88 3	37 0	374 12
Poultry	22 0	16 0	9 0	29 0	28 0	20 0	10 0	134 0
Other	9 0	7 0	31 0	19 0	0 0	6 0	7 0	79 0
Total	312 4	28 0	234 4	129 1	42 0	211 3	92 1	1048 13
Anthelmithics								
Beef	83 0	2 0	76 0	17 0	8 0	51 0	17 0	254 0
Sheep	141 0	0 0	11 0	44 0	5 0	84 0	85 0	370 0
Pork	23 0	0 0	14 0	5 0	0 0	19 0	12 0	73 0
Total	247 0	2 0	101 0	66 0	13 0	154 0	114 0	697 0
Growth promotants								
Beef	211 0	18 0	205 0	43 0	20 0	108 0	57 0	662 0
Sheep	89 0	0 0	11 0	50 0	3 0	62 0	55 0	270 0
Pork	5 0	0 0	8 0	1 0	0 0	5 0	5 0	24 0
Poultry	2 0	2 0	0 0	1 0	3 0	0 0	1 0	9 0
Other	3 0	1 0	23 0	8 0	0 0	2 0	18 0	55 0
Total	310 0	21 0	247 0	103 0	26 0	177 0	136 0	1020 0
Insecticides								
Beef	328 0	28 0	334 0	52 0	26 0	205 0	64 0	1037 0
Sheep	317 0	0 0	17 0	166 0	8 0	189 0	145 0	842 0
Pork	4 0	10 0	0 0	8 0	10 0	5 0	3 0	40 0
Poultry	72 0	0 0	54 0	17 0	3 0	49 0	12 0	207 0
Feral	20 0	0 0	10 0	0 0	0 0	0 0	0 0	30 0
Other	68 0	5 0	33 0	43 0	19 0	8 0	19 0	195 0
Total	809 0	43 0	448 0	286 0	66 0	456 0	243 0	2351 0
Metals								
Beef	21 1	1 0	20 1	6 0	1 0	13 1	2 0	64 3
Sheep	45 3	0 0	1 0	14 2	3 0	20 3	14 2	97 10
Pork	5 0	2 0	0 0	4 0	3 0	0 0	3 0	17 0
Poultry	8 0	0 0	8 1	5 1	0 0	9 0	4 0	34 2
Other	0 0	5 1	0 0	0 0	0 0	0 0	9 1	14 2
Total	79 4	8 1	29 2	29 3	7 0	42 4	32 3	226 17

Zoonoses

The National Notifiable Diseases Surveillance System of the Communicable Diseases Network Australia New Zealand collects statistics about many human diseases. Table 11 summaries some of the information for zoonoses. Q fever continues to be the most commonly notified zoonosis, with NSW and Queensland reporting the most notifications.

Contributed by: Communicable Diseases Intelligence, Department of Family Services and Health

Table 11: Notifications of zoonotic diseases in humans

Disease	Q4-95	Q1-96	Q2-96	Q3-96	Q4-96	Current quarter							
	Australia				AUST	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Brucellosis	9	9	10	8	13	0	0	0	12	0	0	1	0
Hydatidosis	14	11	12	9	17	1	3	0	3	0	0	10	0
Leptospirosis	48	64	65	44	55	0	8	0	11	0	7	29	0
Listeriosis	11	16	15	23	19	0	10	0	1	1	0	3	4
Ornithosis	83	27	24	12	24	0	0	0	0	0	0	23	1
Q fever	123	122	135	140	142	0	64	0	56	2	0	17	3

Salmonella surveillance

The National Salmonella Surveillance Scheme (NSSS) is operated and maintained on behalf of the Commonwealth and States/Territories by the Microbiological Diagnostic Unit at the University of Melbourne. Data on isolates of salmonellae and other pathogens are submitted to the NSSS from participating laboratories around Australia.

Quarterly newsletters and annual reports of both human and non-human isolates are published, and detailed data searches are provided on request to the NSSS. Table 12 summarises *Salmonella* isolations from animals, notified to the NSSS for the previous quarter.

Contributed by: National Salmonella Surveillance Scheme, Microbiological Diagnostic Unit, University of Melbourne.

Table 12: Salmonella notifications, 1 July to 30 September 1996

Serovars	avian	bovine	canine	equine	feline	ovine	porcine	other	Total
<i>S. bovismorbificans</i>	0	13	0	0	1	2	1	1	18
<i>S. dublin</i>	0	46	1	0	1	0	0	0	48
<i>S. infantis</i>	20	3	0	0	0	0	1	0	24
<i>S. typhimurium</i>	12	114	5	4	0	2	0	7	144
Other	6	58	11	5	2	1	3	29	115
Total	38	234	17	9	4	5	5	37	349

Disease Watch Hotline – 1800 675 888

The Disease Watch Hotline is a toll-free telephone number that connects callers to the relevant State or Territory officer to report concerns about any potential exotic disease situation. Anyone suspecting an exotic disease outbreak should use this number to get immediate advice and assistance.

Contact: Chris Bunn, Animal Diseases/Incidents (formerly the Foreign Diseases Unit), DPIE.

Suspect Exotic Disease Investigations

There were 25 investigations into possible exotic disease reported during the quarter as shown in Table 13.

Table 13: Exotic disease investigations, 1 October to 31 December 1996

Disease	Species	State	Reponse (key below)	Finding
Newcastle disease	avian	NSW	3	Ostrich fading syndrome
Australian bat lyssavirus	feline	NSW	3	Acute toxicosis
Equine morbillivirus	equine	QLD	3	Pneumonia (not EMV)
Equine morbillivirus	equine	QLD	2	Gastroenteritis
Equine morbillivirus	feline	QLD	3	Pneumonia (not EMV)
Equine morbillivirus	feline	QLD	3	Pneumonia (not EMV)
Avian influenza	avian	QLD	2	Marek's disease
Avian influenza	avian	QLD	2	Marek's disease
Anthrax	bovine	QLD	2	Not anthrax
Anthrax	equine	QLD	2	Not anthrax
Equine morbillivirus	equine	QLD	3	Negative
Avian influenza	avian	QLD	3	Negative
Equine morbillivirus	feline	QLD	3	Pneumonia (not EMV)
Avian influenza	avian	VIC	2	Negative
Foot-and-mouth disease	bovine	VIC	2	Bovine papular stomatitis
Newcastle disease	avian	VIC	2	Negative
Avian influenza	avian	VIC	2	<i>E coli</i> septicaemia
Contagious bovine pleuropneumonia	bovine	VIC	2	<i>Pasteurella</i> pneumonia
Rabies	feline	WA	1	Negative for rabies
Rabies	feline	WA	1	Negative for rabies
Newcastle disease	avian	WA	1	Negative
Maedi-visna	ovine	WA	2	Negative
Bovine spongiform encephalopathy	avian	WA	1	Negative
Foot-and-mouth disease	camel	WA	3	Contagious ecthyma
Newcastle disease	avian	WA	1	Negative

KEY to highest level response:

- 1 Field investigation by Government Officer
- 2 Investigation by State or Territory Government veterinary laboratory
- 3 Specimens sent to the Australian Animal Health Laboratory (or CSIRO Division of Entomology)
- 4 Specimens sent to reference laboratories overseas
- 5 Regulatory action taken (quarantine or police)
- 6 Alert or standby

NAHIS web site

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

This newsletter is also available on the NAHIS web site. The site is being developed to provide information and statistics about animal health matters in Australia.

NAHIS contributors

Name	Organisation	Phone	Fax	e-mail
Chris Baldock	NAHIS Program Manager	07 3379 5385	07 3278 1953	ausvet@eis.net.au
Peter Black	Qld State Coordinator	079 360 270	079 361 753	blackp@dpi.qld.gov.au
Chris Bunn	Animal Diseases/ Incidents, DPIE	06 272 5540	06 272 3372	chris.bunn@dpi.gov.au
Kim Critchley	SA State Coordinator	08 8207 7908	08 8207 7852	critchley.kim@pi.sa.gov.au
John Elliott	Tas. State Coordinator	03 6336 5334	03 6336 5374	
John Galvin	Vic. State Coordinator	054 304 517	054 304 505	galvinj@goldy.agvic.gov.au
Graeme Garner	BRS, NAHIS Coordinator	06 272 5369	06 272 4533	mgg@mailpc.brs.gov.au
Ana Herceg	Communicable Diseases Intelligence	06 289 1555	06 289 7791	http://www.health.gov.au
Diane Lightfoot	National Salmonella Reference Laboratory	03 9344 5701	03 9344 7833	
Bill Matthews	National Granuloma Submission Program, AQIS	06 272 5042	06 272 3307	william.matthews@dpi.gov.au
Terry Nicholls	National Residue Survey, BRS	06 272 4549	06 272 4023	tjn@mailpc.brs.gov.au
Richard Norris	WA State Coordinator	09 368 3637	09 367 6248	richardn@aidpo.agric.wa.gov.au
Diana Pinch	NT Coordinator	08 8999 2354	08 8999 2024	diana.pinch@dpif.nt.gov.au
Evan Sergeant	NSW State Coordinator	063 913 687	063 619 976	Evan.Sergeant@smtpgwy. agric.nsw.gov.au
Peter Thornber	Office of the Aust. CVO, DPIE	06 271 6343	06 272 5697	peter.thornber@dpi.gov.au
David Wilson	AQIS Policy	06 272 4562	06 272 3399	david.wilson@dpi.gov.au

This report was prepared for the Australian Animal Health Council Limited by the Bureau of Resource Sciences. Information in the report is subject to change pending the provision of additional or amended data from individuals or organisations supplying data to the National Animal Health Information System. Readers are encouraged to reproduce and distribute information contained in this report, provided due acknowledgment is made of its source.