



ANIMAL HEALTH SURVEILLANCE QUARTERLY

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Volume 3

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Issue 1

Preface

Ovine Johne's disease is receiving much attention this year, and this issue of *Animal Health Surveillance Quarterly* summarises activity to date. It also gives details of the findings of a recent review of Australia's animal health system. In addition, there are items of interest from States and Territories.

This newsletter summarises the findings of disease surveillance and monitoring activities reported to the National Animal Health Information System (NAHIS) for the period from 1 January to 31 March

1998. Only summary information is recorded in NAHIS, with detailed data being maintained by the source organisation. The information included in this report is accurate at the time of publication but, because of the short reporting and production time, minor discrepancies may occur.

I am sure that you will find this report to be useful.

GARDNER MURRAY
Australian Chief Veterinary Officer

Ovine Johne's Disease — the National perspective

Johne's disease (JD) is a chronic enteric wasting disease, caused by *Mycobacterium paratuberculosis*. One form of the disease, ovine JD (OJD) was initially diagnosed in central New South Wales (NSW) in 1980, and for more than 10 years it was believed to be restricted to this area. More recently, it has become clear that OJD is present in southern areas of NSW. It has also been diagnosed in Victoria, on Flinders Island and in South Australia.

The need for a nationally coordinated JD control program, that includes OJD, has been recognised by both governments and industry. Although endemic disease control is a State responsibility, it was appreciated that nationally agreed standards and objectives were likely to allow State programs to result in the most efficient outcomes. In July 1995, the National Farmers' Federation appointed the National JD Coordinating Committee (NJDCC), to coordinate industry and government efforts. The NJDCC comprised representatives from the dairy, beef, sheep, goat, deer and alpaca industries as well as from the veterinary profession, research and development corporations, and governments. It aimed to reduce the national impact of JD in all species and to promote and assist industry's management of the

disease, and facilitated considerable consultation with livestock industries and governments in 1996. In early 1997, the Australian Animal Health Council (AAHC) introduced the National JD Industry Liaison Committee (NJDILC), which took over from the NFF committee. A National JD Coordinator was appointed.

Recent developments

As the wider distribution of OJD became apparent, the need for its control on a national basis became more evident and urgent (see Table 1). As a result of a nationally coordinated effort, two developments resulted — the launching of the Australian Sheep JD Market Assurance Program (MAP) in June 1997,

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Table 1: Detection and destocking of infected flocks at 31 March 1998

State	No. of infected	No. of infected
NSW	243	15
VIC	75	67
TAS	8	1
SA	1	1
WA	0	0
QLD	0	0
NT	0	0

and agreement on Standard Definitions and Rules for regulatory disease control in March 1998.

At the same time, calls were being made for a national OJD eradication program. Victoria had initiated a destocking program in late December 1996, with compensation being made available from State Government and industry funds. In May 1997, AAHC endorsed the NJDILC's recommendation that compulsory control and/or eradication programs in infected zones or at a national level should not be implemented unless, among other things, studies on economic cost-benefits and the distribution and prevalence of infection were completed.

During the following two months, the results of an economic analysis by the Australian Bureau of Agricultural and Resource Economics, and of surveillance for OJD in NSW, led to strong support within the sheep industry for a national program to eradicate OJD on a progressive and voluntary basis. This was supported in principle by NJDILC in July, subject to adequate financial assistance from government and livestock industries. Following the NJDILC recommendation, AAHC recommended that Commonwealth and State Ministers for Agriculture (ARMCANZ) endorse a Progressive Control and Eradication Program for OJD, with an indicative budget of \$38.2 m over five years. This was endorsed 'subject to consultation within jurisdictions', and AAHC was requested to negotiate funding arrangements and conduct a thorough assessment of costs, for consideration out-of-session in October 1997.

Considerable activity occurred over the ensuing three months. Revised costings of the proposed program, proposals for financial assistance, and cost-sharing arrangements for funding the program were developed. The purpose of the proposed 'voluntary' program was to encourage, but not force, producers

to participate in the program and undertake eradication by destocking in the initial stages. This was in recognition of concerns over the uncertainty of distribution of the disease (and therefore, in the ability to complete a national eradication program), as well as reservations over some technical aspects of eradication. This initial 'voluntary' stage would only progress to compulsory eradication if all concerns were adequately addressed.

The issue of funding the program was not resolved by October. Industry had made a commitment to fund up to 50% of the costs, but no agreement was reached on how the remaining 50% of the program would be funded. As a result of the unresolved funding issue, and increasing concern on the reliability of surveillance data, the AAHC Board recommended to ARMCANZ that further surveillance data to ascertain the feasibility of eradication, and further negotiations to determine funding arrangements, were required before a National Eradication Program could commence. An AAHC Technical Working Group on 'enhanced surveillance' was formed and reported to AAHC in early January.

In December, the Commonwealth Minister for Primary Industries commissioned Mr Denis Hussey and Professor Roger Morris to investigate the role that the Commonwealth might play in regard to OJD. This report, released in January 1998, recommended two three-year programs that maintained surveillance and control of the disease while evaluating tools and options for control and possible eradication, should that be agreed to at some future time. This approach was accepted by the livestock industries and by governments as the basis for dealing with OJD in future.

At its February meeting, ARMCANZ considered both the Hussey-Morris Report and the Enhanced Surveillance Report, and supported an immediate Interim Surveillance Monitoring and Research Program, on a 20% Commonwealth Government: 30% State Governments basis subject to industry commitment to fund the other 50%. It also requested a detailed Business Plan for the Evaluation Program to be developed for consideration in July.

As a result, AAHC announced a \$2.45m Interim Surveillance and Research Program to be carried out

from April 1 to July 31 1998. The key elements to the Interim Program are:

- tracing and investigations of 'at risk' flocks to support zoning declarations;
- MAP subsidies;
- evaluation of abattoir monitoring as a surveillance tool; and
- evaluation of pooled faecal culture test.

In addition, AAHC established a National OJD Committee to develop a detailed Business Plan for a six-year National OJD Control and Evaluation Program. Four technical working groups have been established to assist with this. It is expected that the Business Plan will be considered by the AAHC Board in early July, and submitted to ARMCANZ for consideration at the end of July. The Hussey–Morris Report will act as a basis for much of the Business Plan. Key elements to the six-year program are likely to be:

- evaluation of on-farm control and eradication strategies;
- completion of zoning testing and proclamations;
- increased surveillance to provide a high level of certainty of the distribution and prevalence of OJD, including abattoir monitoring and implementation of a sheep identification system; and
- increased research into improved tests.

AAHC has also indicated it will independently review the flow of benefits from any eradication program to further develop the appropriate funding arrangements for the six-year program, and any subsequent control/eradication program.

Conclusion

The JD Program is a joint industry and government program, and there has been strong agreement that the approach to JD should be a national one. There

has been considerable industry involvement and commitment to ensure the Program commenced, and moves for a National OJD Program have had strong industry support.

Despite this industry commitment at the national level, there has been concern, both within industry and from governments, over the accuracy of the relatively limited data on the prevalence and distribution of OJD, and the feasibility and cost-effectiveness of national eradication. As a result, getting agreement to fund a national OJD program has been difficult. Although there is general agreement from all parties of the extent of current knowledge and information, there remains disagreement on which course of action should be followed.

The long-term future of OJD control in Australia will depend heavily on the results of surveillance and evaluation projects in the next six years. If the disease is more widespread than currently estimated, or eradication at the farm level proves more difficult, the economic benefit of (and even the success of) large-scale regional programs would be questionable. However, if surveillance increases confidence that the disease has a limited distribution, and evaluation of property programs demonstrates that eradication is feasible, then a future national eradication program should be beneficial. If OJD is not eradicated, it will continue to spread, infecting increasing numbers of flocks over wider areas. Changes in management and vaccination of infected flocks may be widely implemented to limit the effects of the disease. Movement of sheep will probably be disrupted as protected and free zones attempt to keep the disease out and accept sheep only from MAP assessed flocks.

Contributed by: MB Allworth and DJ Kennedy, National Coordinators, National Johne's Disease Program

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.

Tuberculosis Freedom Assurance Program

The Tuberculosis Freedom Assurance Program (TFAP) commenced on 1 January 1998. This is a surveillance program to ensure that any resurgence of tuberculosis (TB) in Australian cattle is promptly and effectively eliminated. It follows the Brucellosis and Tuberculosis Eradication Campaign (BTEC) that successfully concluded on 31 December 1997 with the declaration of Australia as a Free Area for bovine tuberculosis (*AHSQ*, Vol. 2, No. 4).

Like BTEC, TFAP is a cooperative partnership between government and industry and each has an agreed role and funding obligation. In a major organisational change, AAHC coordinates funding and program management for the program. It employs a part-time National Coordinator who works with a Coordination Committee on which all stakeholders are represented.

The program is implemented by the States and Territories in accordance with a formal agreement between all of the parties involved and TFAP Standard Definitions and Rules. This agreement binds AAHC, the Commonwealth Government, the State and Northern Territory (NT) governments, and the Cattle Council of Australia to a set of operating principles that are broadly based on those that operated during BTEC. However, TFAP has a different set of funding arrangements to BTEC, with the different components being funded by specific parties, as outlined below.

National Granuloma Submission Program

The National Granuloma Submission Program is the main TB surveillance process. It is funded by the Commonwealth Government and involves the Australian Quarantine and Inspection Service and States and Territories working together to maximise the number of granulomatous lesions identified in cattle at slaughter. Lesions are submitted to an approved laboratory and examined intensively, according to a national protocol, for evidence of TB.

Field operations

These comprise all the activities necessary to effectively monitor for, diagnose and manage the eradication of tuberculosis in a particular State or the

NT. This includes providing policy advice, legislation and all infrastructure to support diagnostic and eradication activities, including maintaining tracing systems, developing property programs, supervising test and slaughter programs and record maintenance. Field operations are funded and carried out by the States and NT according to the TFAP Agreement and the Standard Definitions and Rules.

Australian Reference Laboratory

Funding for the Australian Reference Laboratory for Bovine Tuberculosis, an OIE-recognised World Reference Laboratory for TB, is provided by the Commonwealth Government. It is located within the WA Department of Agriculture at South Perth and is required to offer specialist diagnostic services, stay abreast of scientific developments in the field, and maintain an international profile.

Tuberculosis Case Register

A TB Case Register is also funded by the Commonwealth Government. The register is managed by Queensland Department of Primary Industries and contains records of cases of TB found in Australia.

Producer assistance measures

Producer assistance measures are funded by the Australian cattle industry. They include compensation to producers for reactor cattle and cattle destroyed as a result of control operations, support to muster and hold cattle to restock properties, and a subsidy on the costs of returning cattle to a property that has been depopulated as part of eradication procedures. An interest subsidy is available on loans to erect any additional infra-structure required to comply with the program's needs.

TFAP will continue until the 31 December 2002. A review in three years time will determine whether any program should follow its completion.

Inquiries about TFAP should be directed to the TFAP Coordinator, Dr Geoff Neumann, c/- Australian Animal Health Council Limited, Suite 15, 26-28 Napier Close, Deakin ACT 2600

Strategic priorities for animal health

A major review of Australia's animal health system was undertaken in 1997 to define strategic priorities for the next five years. A plan, covering 1998–2003, has been developed to deliver defined core animal health activities.

Under Australia's federal system, animal health services are provided under a number of separate and autonomous jurisdictions. It must be recognised that common national objectives will be managed and delivered on a regional basis, with varying approaches. The aim must be for consistency, rather than uniformity, to achieve national outcomes.

To meet its national and international obligations, Australia's animal health services need to meet certain minimum performance standards. These standards need to be determined and agreed, and subjected to ongoing monitoring that will give early warning of deficiencies and attract remedial action. This will not be an easy task and it is recommended that the laboratory sector be reviewed first, and that approaches be developed for reviewing other elements of the animal health system.

Strategies and actions proposed to achieve the shared vision for Australia's animal health include: legislative and administrative matters; involvement of the private sector; surveillance, diagnosis and reporting; animal welfare; food safety and residues; and emergency preparedness.

Some of these actions are already underway, and most are expected to start within the next 12 months; all should be completed within five years. Undoubtedly, other challenges and opportunities will also occur during this period.

The immediate outcomes required are:

- commitment to the principles outlined in the strategic priorities plan;
- endorsement of the roles and responsibilities of the key stakeholders, as a basis for negotiation on policy, service delivery and funding; and
- agreement to develop and monitor performance standards for Australia's animal health services.

A range of events such as chemical residues, toxigenic *E. coli*, and the occurrence of bovine spongiform encephalopathy overseas has sensitised the Australian and overseas public to food health issues. More emphasis on accountability at all stages of production of livestock and livestock products is now essential. The development and application of quality assurance schemes using HACCP principles will be an essential part of all future food production systems. This approach will be supported by a continuing effort at disease prevention within production systems

To achieve national outcomes efficiently, Australia's animal health service needs to have a clear focus in the broadest, collective sense. To achieve its purpose of protecting consumers, reducing the impact of disease on market access and production, and applying appropriate animal welfare standards, Australia's animal health services will have a number of core functions. These are to:

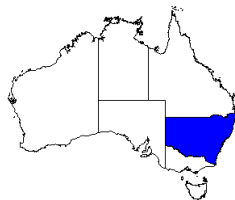
- protect domestic and other consumers from both real and perceived risks from residues, contaminants, and disease agents;
- enable continuous, competitive access to all export markets;
- provide harmonised, cost-effective and efficient service delivery arrangements throughout Australia;
- prevent entry and establishment of unwanted pests and pathogens;
- provide sufficient, well organised and succinctly presented information on Australia's animal health status to meet international, national and sub-national requirements;
- minimise the impact on production and trade of animal diseases;
- manage emergency and exotic disease and residue incidences in a cost effective manner with minimal disruption to trade; and
- meet the animal welfare standards of the community and trading partners.

*Peter Thornber
Office of the Chief Veterinary Officer*

State and Territory Reports

New South Wales

Contributed by:
Evan Sergeant
NSW Agriculture



Anthrax

There were nine anthrax incidents diagnosed during the quarter. A group of four cases occurred in the central-west area, on adjoining properties and adjoining paddocks — two in Molong Rural Lands Protection Board (RLPB) and two in Dubbo RLPB. One property had cattle deaths last year for which a diagnosis was never confirmed and that may have been due to anthrax. This may have contributed to a build-up of soil contamination leading to this year's cases. Another pair of almost adjacent properties in Narrandera RLPB had cases. Again, one property had a history of anthrax 40 years ago. All these cases occurred in areas that have a history of anthrax in the early 1940s but have not had any recognised cases in recent years.

The remaining cases involved pigs and sheep on two adjoining properties in Hay RLPB, and cattle on a property in the Murray RLPB.

This brings the total number of incidents for the 1997–98 summer to 13 — well within normal expectations, considering the hot, dry conditions experienced. Laboratory examination excluded anthrax as the cause of death in 10 other disease investigations during the quarter.

Cattle tick control program

Fifty-three properties infested with cattle tick have been detected up to 31 March 1998. Four of these were properties detected in 1997 where mustering problems had permitted infestations to persist. Fourteen properties adjoined infested properties in 1997.

Thirty-one are within the Cattle Tick Protected Area. The remaining 22 are within the former Tick Quarantine Area or former Cattle Tick Protected Area (1996–97). Detailed chemical resistance testing

and DNA testing will be done. However, it is already clear that some of the infestations detected in 1998 relate directly to 1997 infestations and have been spread through unreported livestock movements.

Tick fever in NSW

A single case of tick fever was reported from a property near Urbenville. *Babesia bovis* was diagnosed at post mortem examination. No further cases were observed, and cattle ticks have not been detected on the property. Serological examination of the herd provided equivocal evidence of infection, with some sero-positive animals being sero-negative within two to three weeks. As a precaution, at-risk animals were treated and a cattle tick eradication program is being carried out on the property.

Enzootic bovine leucosis

The 16th round of bulk milk testing (BMT) for enzootic bovine leucosis (EBL) was completed in March, with only 4.7% of the 1796 dairies being positive. At the beginning of the EBL Eradication Program in 1992, more than 25% of tested dairy herds produced positive BMT results. There are still 209 dairy herds in NSW classified as 'infected'. However, the testing indicates that the estimated within-herd prevalence is less than 2% in some 59% of the infected herds, suggesting that more than half of these infected herds may have removed all known EBL reactors for slaughter.

In the March 98 BMT test round, six dairy herds produced an unexpected positive BMT result. The herds are under investigation and preliminary findings indicate that vat milk sampling errors or unintentional introduction of EBL-infected animals may have been responsible for the positive results.

Bat viruses

During the quarter, the 26 fruit bats and two micro-bats examined for evidence of lyssavirus infection gave negative results. Only nine fruit bats have been found to be infected from the 150 fruit bats examined for lyssavirus, while all 34 micro-bats examined have been negative.

Six horses examined for evidence of bat paramyxovirus infection during the quarter had negative results. A total of 91 fruit bats, 12 micro-bats and 11 horses have been examined for evidence of paramyxovirus infection, with one fruit bat serologically positive and one virologically positive.

Avian tuberculosis

Avian tuberculosis caused the deaths of four 10-month-old pullets from Yass. Pathologically, there was multifocal granulomatous hepatitis and splenitis, and *Mycobacterium avium* complex was recovered from the affected organs.

Toxoplasmosis survey

Results from a national pig industry survey of the prevalence of *Toxoplasma gondii* in feral pigs, commercial indoor and outdoor sows and finisher pigs, have been released by the Pig Research and Development Corporation.

The national serological prevalence of toxoplasmosis was estimated as 1.3% for finisher pigs, 11.5% for indoor sows, 6.7% for outside sows and 9.3% for feral pigs. NSW figures were comparable to other States' and compare favourably with those recorded in our major trading partners.

Bee diseases

A further 139 tests for American foulbrood testing were done, bringing the total number of tests since July 1997 to 695. Almost exactly 50% of tests were positives. Of the 347 positive reports, 110 were repeat tests on previously confirmed cases. Of the 237 new cases, 78 also had positive reports during the 1996-97 financial year. Two reports of chalkbrood were received during the quarter.

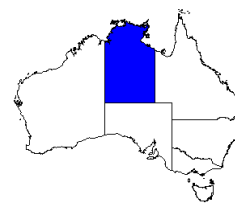
Exotic disease investigations

Following the recent avian influenza (AI) outbreak at Tamworth, increased awareness of exotic disease in poultry resulted in a number of cases being submitted for exclusion testing for AI.

Investigations were also carried out on high mortalities in a breeding complex at Tamworth to exclude AI, and on a suspect Newcastle disease

Northern Territory

Contributed by:
Diana Pinch
NT DPIF



Cattle

Urea poisoning caused deaths in cattle fed a high urea (25%) wet season mineral mix in the Darwin region. The deaths were associated with supplement sites that had previously run out of supplement, and no mortalities were observed at sites where the mix remained available at all times.

The Declared Tick Areas for the cattle tick *Boophilus microplus* have been modified following surveillance during 1997. The southern area of the NT is tick free, and the recent changes have extended this area northwards.

Poultry

About 40 out of 80 backyard poultry (ducks and chickens) died over the course of a week in the Darwin region. Laboratory investigations indicated the deaths were caused by an outbreak of botulism due to type C toxin.

Crocodiles

Increased mortalities in yearling crocodiles were reported at one farm. The animals became inappetent, developed 'fungal' skin lesions, lost condition and died. Septicaemia secondary to stress associated with recent changes in management was suspected. This was confirmed, with bacterial septicaemias due to several organisms that responded to antibiotic treatment and improved husbandry.

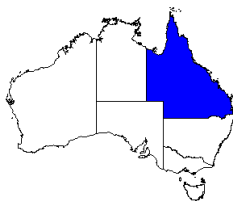
NAHIS web site

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

This newsletter is available on the NAHIS website, which provides information and statistics about animal health matters in Australia.

Queensland

Contributed by:
Gavin Ramsay
Queensland DPI



TSE surveillance

Workshops have been held to provide Departmental staff with specialist skills in the areas of recognition of signs of neurological disease and the collection, preservation and submission of specimens for TSE exclusion. Specimens have been submitted to veterinary laboratories and results will be available for the next quarterly report.

Tick fever

Cases of tick fever due to *Babesia. bovis*, *B. bigemina* and *Anaplasma marginale* have been reported in central, south and south-east Queensland. The variation in rainfall between years has been a contributing factor with increased tick populations in some areas this year. Producers are again being advised of the benefits of vaccination against these diseases.

Bovine ephemeral fever

Bovine ephemeral fever has been reported from south-east and central regions, with northern Queensland expecting cases following high rainfall in recent months. Case severity has been less severe in the south-east but more severe in central region than usual. The west region has not reported any cases of bovine ephemeral fever this year.

Internal parasites

Disease due to internal parasites has been diagnosed in young cattle in good condition on several properties in the north region following good rains. *Haemonchus* and *Cooperia* have been the main parasites each often accounting for almost 100% of faecal culture. Further sampling of older stock on one property has also demonstrated high parasite burdens.

Sheep diseases

'Humpy back' was widely reported in sheep in the west region during February and March. Several

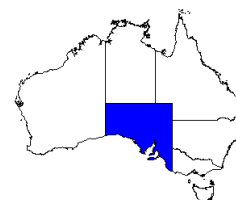
sheep with suspected humpy back have been autopsied. Some were found to have Wallerian degeneration in the spinal cord, as is generally seen in cases of humpy back. However, a ram from Winton, suspected of having humpy back, was diagnosed as suffering from a skeletal myopathy.

Poisoning

Georgina gidyea was found in a paddock in western Queensland where unexplained deaths had been occurring in breeding cattle. Since trees vary in the amount of toxin produced, samples from the trees are being tested for fluoroacetate to confirm the diagnosis.

South Australia

Contributed by:
Kim Critchley
Primary Industries SA



Pyrrolizidine alkaloid concerns

Although there has been little rain of benefit to producers, some areas had heavy local falls just pre-harvest and, as a consequence, a dense germination of potato weed. Producers are now aware of the problems this weed can cause, and manage stock accordingly. Feed mills are also taking precautions and sample grain for potato weed seed. The only report of probable toxicity was in some calves being extensively managed.

Vibrio in abalone

An organism similar to *Vibrio parahaemolyticum* was cultured from specimens obtained from a commercial abalone farm that had extensive mortality. Oxytetracycline medication added to the water appears to have resolved the problem.

Mulberry heart disease

There is a quite high prevalence of mulberry heart disease in South Australia. Many of the State's small piggeries are home-mixers, and the nutrient content is often inconsistent and inadequate. The typical syndrome is sudden death in well grown pigs with confirmation of typical lesions of vitamin E/selenium deficiency on post mortem examination.

Monitoring program for boar semen

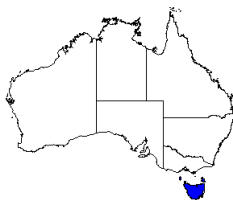
Concerns had been expressed at a suspected lowered fertility of chilled boar semen from one enterprise. Studies indicated there may have been problems with the antibiotics used to assist with bacterial control. Although it is only a short time since the antibiotics were changed, the results look promising.

Johne's disease in alpaca

Last quarter there was a report of positive *Mycobacterium paratuberculosis* faecal culture in two alpaca from different properties. Traceback failed to identify a likely source, and histological and bacterial examination of the slaughtered animal was negative. The other animal is quarantined and, having returned a negative faecal test, will now be subjected to a number of sequential faecal culture tests.

Tasmania

Contributed by:
Rod Andrewartha
DPIF, Tasmania



Fruit bats on King Island

Although there are no fruit bats on King Island, one, presumably lost, was captured when it became tangled in netting over fruit trees on the island. Although there were no clinical signs of disease, fixed brain and blood samples collected from a flying fox submitted live from King Island were sent to the Australian Animal Health Laboratories (AAHL) for testing for lyssavirus and morbilliviruses. The blood samples were positive for bat paramyxovirus on serology but brain samples were negative for both bat paramyxovirus and lyssavirus.

Fish virus being investigated

An aquabirnavirus was detected in farmed finfish in Macquarie Harbour on the west coast of Tasmania. The virus, not seen before in the State, was detected as an incidental finding during routine fish health surveillance and was not associated with any significant outbreak of disease in the fish.

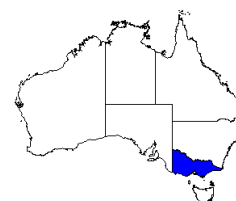
Surveillance testing is being carried out to determine the distribution of the virus and the species affected. Pathogenicity testing is under way at AAHL to determine the significance of the virus. Farmers in the area where the virus was detected are cooperating with the Department pending clarification of the significance of the finding. This involves a restriction on the movement of broodstock from the area.

Hepatotoxic condition in cattle

Mortality of about 60% occurred in a herd of Angus cattle very soon after it was placed onto an old oaten stubble pasture (with other old senescent grass) and some green regrowth coming through the dead litter. Histopathology of the liver was consistent with a condition recognised in Tasmania, generally in the spring or autumn, and believed to be caused by an unknown pasture toxin. The cause of death is massive destruction of liver cells, and the condition can strike suddenly with animals dying within 12 hours of access to toxic pasture. As the cause cannot be recognised in the pasture, the only recommendation is to avoid letting pastures go rank and dry off. Heavy grazing with sheep to remove the excess pasture is recommended as sheep appear to be immune to the problem. Recovered animals show signs of photosensitisation. Other outbreaks in other years have resulted in losses of 50 to 70 cows in dairy herds.

Victoria

Contributed by:
John Galvin
Agriculture Victoria



Anthrax

In north-central Victoria, re-vaccination of cattle on properties where anthrax occurred during early 1997, and on adjoining properties, was completed by mid-November 1997. This involved vaccinating more than 50 000 cattle on 291 properties. From January to March 1998, one case of anthrax was confirmed. This was a vaccinated calf that died on a property on which multiple cases of anthrax occurred during 1997.

Surveillance for anthrax was established at a local knackery in January 1998, as was done during the

1997 outbreak. From January until the end of March, more than 680 cattle were tested without any cases of anthrax discovered. These cattle originated from a wide area across north-central Victoria. The results indicate that the preventive program put in place after the 1997 outbreak has been a major success. All properties that vaccinated during 1997 will be required to vaccinate again during 1998 under a program that is jointly funded by industry, producers and the Victorian Government.

Ovine Johne's disease

Since OJD was diagnosed in Victoria in November 1995, some 75 infected flocks have been detected. The first 33 flocks that were detected before the summer of 1996–97 were all destocked over that summer period. A further 33 flocks were detected by December 1997. At the end of March 1998, there are eight remaining infected flocks — all others have been destocked to eradicate the disease.

More than 600 farms have been investigated since November 1995, and about 1000 on-farm investigations conducted, with more than 20 000 sheep blood tested for OJD. The number of flocks detected as OJD-infected compared to the total number of farms investigated has decreased from 18.1% in January 1997 to 12.2% in March 1998. The level of active surveillance will increase under the national OJD program.

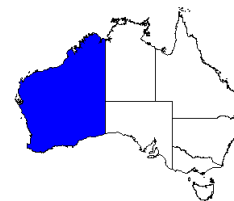
Plant poisonings of stock

Millet hay was purchased for drought-affected beef cattle in East Gippsland and 11 died after feeding. Analysis of the hay showed very high nitrate levels and the deaths were attributed to nitrate toxicity. Lupinosis was reported as the cause of death of a number of sheep in central Victoria following the summer rains.

Caltrop (*Tribulus terrestris*) is a summer weed that has been associated with severe jaundice and death in sheep on several occasions in north-west Victoria. The nervous form of the disease recorded in the scientific literature has not been reported in Victoria. Caltrop poisoning was the cause of deaths in several mobs of lambs in the Victorian Mallee, where 50 of 400, and 140 of 350 lambs died with signs of acute liver failure.

Western Australia

Contributed by:
Richard Norris
Agriculture WA



Ovine Johne's disease

Western Australia is involved in two key activities as part of the nationally agreed Interim Surveillance and Research Program. The first activity provides information about the level of 'false positives' found by a proposed technique to detect OJD — adult sheep slaughtered at an abattoir are being examined for gross lesions of OJD in the gastrointestinal tract and regional lymph nodes. If any suspicious lesions are seen, samples are sent for histopathological examination.

The second activity involves blood testing of sheep from 'at risk' flocks — those that have imported sheep from New Zealand or certain areas of Australia. The testing is being done as part of the national program and not because there is a suspicion that infection is present. It will provide additional evidence of Western Australia's freedom from OJD

Liver fluke

Health requirements for stock entering Western Australia are to be tightened to ensure that imported animals are free of liver fluke. This action follows the discovery of liver fluke in 29 imported horses in 1997. Targeted surveillance detected that liver fluke survived treatments given as part of the import protocol, and the fluke were resistant to repeated conventional treatment. Fortunately, follow-up surveillance has indicated that the fluke were eradicated following special treatment.

TSE surveillance

Surveillance for transmissible spongiform encephalopathy (TSE) has commenced in Western Australia. Veterinarians have been asked to submit brain and other tissues from sheep or cattle with nervous signs, for TSE exclusion and differential diagnosis. During the quarter, brains from four sheep were examined histologically for evidence of TSEs, with negative results.

Chalkbrood disease

Chalkbrood disease has recently been found in several apiaries in Western Australia. An emergency response campaign was undertaken following initial detection. However, surveillance showed that infection was established in several apiaries in the metropolitan and southern areas of the State.

Veterinary Services technical update

A recent meeting of 24 Government Veterinary Officers located from Kununurra to Esperance provided an opportunity to update technical skills in

collaboration with pathologists from the Department's Animal Health Laboratories. The meeting focused on recognition, diagnosis and sample submission for a range of exotic and endemic diseases in livestock and poultry.

Surveillance in the northern pastoral areas of the State will be enhanced with the recent appointment of an additional veterinarian at Kununurra and a new veterinary officer at Karratha. An essential part of their duties will be conducting disease investigations and establishing a surveillance network involving pastoralists and others in the region.

Quarterly Disease Statistics

Control activities

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 undertaking a program of bulk milk testing of all dairy herds. Table 2 shows the number of dairy herds tested free at the end of the

Table 2: Dairy herds tested free of EBL at 31

	NSW	NT	QLD	SA	TAS	VIC	WA	AUST
Free	1473	0	1735	762	719	6481	455	11 625
Herds	1795	0	2026	787	810	8453	467	14 338

Ovine brucellosis

Accreditation programs for ovine brucellosis freedom are operating in most States. Table 3 shows the number of accredited flocks at the end of the quarter.

Table 3: Ovine brucellosis accredited free flocks at 31 March 1998

NSW	NT	QLD	SA	TAS	VIC	WA	AUST
1280	0	71	554	150	767	86	2908

Tuberculosis

Australia was declared a Free Area for bovine tuberculosis on 31 December 1997. The National Granuloma Submission Program is the major surveillance method for TB under the Tuberculosis Freedom Assurance program. Table 4 summarises results from the Program. There were no cases of TB detected in the current quarter in the 508 granulomas that were submitted.

Table 4: Results of the National Granuloma Submission Program

	Granulomas Submitted	TB +ve
Jan - Mar 97	1043	0
Apr - Jun 97	943	1
Jul - Sep 97	1464	4
Oct - Dec 97	848	0
Jan - Mar 98	508	0
NSW	79	0
NT	0	0
QLD	288	0
SA	17	0
TAS	50	0
VIC	4	0
WA	70	0

Johne's disease

JD is seen primarily in dairy cattle but occurs occasionally in beef cattle, sheep and dairy goats, and has been diagnosed in a small number of alpacas. JD occurs in NSW, Victoria, Tasmania and South Australia. Surveillance programs support the view that cattle in Queensland, Western Australia and Northern Territory are free of JD, and active measures are taken to stamp-out any incursions. There are also Market Assurance Programs (MAP). Table 5 shows the number of herds and flocks known or suspected to be infected.

Table 5: Herds/flocks with JD at 31 March 1998

	Cattle	Sheep	Goats	Camelid	Total
NSW	143	227	9	2	381
NT	0	0	0	0	0
QLD	0	0	0	0	0
SA	27	0	0	0	27
TAS	34	8	9	0	51
VIC	1805	8	8	12	1833
WA	0	0	0	0	0
AUST	2009	243	26	14	2922

CattleMAP

The revised MAP for cattle, CattleMAP, was endorsed by Veterinary Committee and AAHC in March. Fifteen hundred copies of the Rules and Guidelines have been printed for distribution to owners of assessed herds, approved veterinarians and other interested people.

The major change in the CattleMAP is the consolidation of the Tested Negative (TN) and Monitored Negative (MN) testing streams into one MN stream. Herd status in the original National JDMAP is transferred to the CattleMAP. All herds at the same level (1, 2 or 3) have equivalent status and cattle can move freely between TN1 and MN1 herds and between TN2 and MN2 herds. TN herds will progress to the next highest MN status at their next negative test and assessment (i.e. from TN1 to MN2, TN2 to MN3). With this change, the testing now involves cattle over two years of age. In herds with up to 210 cattle over two years of age, all such cattle will be tested. In larger herds a sample of up to 300 cattle will be tested.

The other main change is that, under certain conditions, assessed herds can now source bulls from

traditional bull supply herds that are one status lower.

The number of assessed herds in CattleMAP increased to 416 (278 beef herds and 138 dairy herds) at 30 April 1998.

SheepMAP

At the end of March, 52 sheep flocks had been assessed under the SheepMAP — 7 in South Australia, 9 in Victoria and 36 in NSW. Merino or poll merino flocks constituted three quarters of these assessed flocks. To encourage flock testing, the Interim Surveillance and Research Program for OJD includes a subsidy for flock owners enrolling in the SheepMAP between April and July 1998.

Further information about the various JD Market Assurance Programs can be obtained from David Kennedy 02 6365 6016 or Bruce Allworth 02 6036 9233. Lists of assessed beef and dairy herds and sheep flocks are available

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. A total of 79 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
Jan - Mar 97	122	0	2288	0
Apr - Jun 97	142	0	4336	0
Jul - Sep 97	196	0	3956	0
Oct - Dec 97	169	0	2847	0
Jan - Mar 98	79	0	1285	0
NSW	18	0	149	0
NT	0	0	0	0
QLD	34	0	265	0
SA	2	0	19	0
TAS	0	0	210	0
VIC	1	0	268	0
WA	24	0	374	0

Rabbit calicivirus

Rabbit calicivirus (RCV) has now been released at more than 780 sites around Australia (Table 7). The Rabbit Calicivirus Disease (RCD) Monitoring and Surveillance Program is responsible for assessing the spread, persistence and impact of RCD. There are ten intensive sites where changes in rabbit populations, disease prevalence, flora, fauna, predators and agricultural production are measured. In addition, there are 54 broadscale sites where data on virus activity and rabbit abundance are collected.

As at February 1998, RCD has been recorded at all ten intensive monitoring sites. Rabbit numbers have remained low at seven out of nine of these sites where the initial RCD impact has been assessed. In the arid/semi-arid areas (less than 300 mm rainfall per year) 82% of the intensive and broadscale sites have recorded rabbit population declines of greater than 65%. By contrast, RCD appears to be less effective in reducing rabbit numbers in wetter areas where only 46% of the sites recorded similar declines.

*For further information contact Mr Mike Hillier,
Executive Officer, RCD Program, Tel 02 6272 3425*

Table 7: RCV releases to February 1998

	No. release sites	No. with obvious RCV activity	No. with no obvious RCV activity	No. not assessed
ACT	8	2	3	3
NSW	485	269	132	84
NT	9	2	5	2
Qld	83	25	5	53
SA*	28	0	0	28
Tas	17	3	0	14
Vic	116	67	31	18
WA	41	13	20	8
Total	787	381	196	210

* Serological testing has shown that RCV had arrived at all sites in SA before deliberate release

Laboratory testing

The results of serological testing from routine laboratory submissions for the quarter are shown in Table 8.

Table 8: Serological testing from routine submissions to State 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
Jan - Mar 97	729	197	5064	281	851	203	3256	147	416	0	287	4
Apr - Jun 97	796	144	6925	463	1426	528	5860	140	398	3	240	0
Jul - Sep 97	1011	285	7797	182	944	171	3231	28	348	0	279	1
Oct - Dec 97	2229	356	7442	332	1464	180	5228	2	710	1	462	26
Jan - Mar 98	1683	408	8005	224	2072	611	907	16	657	0	708	9
NSW	306	141	756	6	605	15	540	0	501	0	628	4
NT	397	115	702	111	458	109	0	0	0	0	0	0
QLD	415	120	4936	83	409	72	352	16	101	0	26	0
SA	2	0	301	0	2	0	0	0	8	0	2	0
TAS	2	0	6	0	0	0	8	0	0	0	0	0
VIC	126	0	164	0	147	0	0	0	0	0	17	5
WA	435	32	1140	24	451	415	7	0	47	0	35	0

Surveillance activities

Zoonoses

The National Notifiable Diseases Surveillance System of the Communicable Diseases Network Australia New Zealand collects statistics about many human diseases. The information is accessible at <http://www.health.gov.au/hfs/pubs/cdi/>. Table 9 summarises some of the information for zoonoses.

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

Table 9: Notifications of zoonotic diseases in humans

Disease	Q1-97	Q2-97	Q3-97	Q4-97	Q1-98 AUSTRALIA	Current quarter							
						ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Brucellosis	12	4	13	13	13	0	1	0	11	0	0	1	0
Hydatidosis	6	13	22	19	9	0	0	0	2	3	0	4	0
Leptospirosis	31	40	20	33	40	0	7	2	24	0	0	5	2
Listeriosis	23	22	14	9	18	0	16	0	1	1	0	0	0
Ornithosis	22	12	5	7	5	0	0	0	0	0	2	2	1
Q fever	139	166	136	124	114	0	50	0	53	1	0	2	8

Northern Australia Quarantine Strategy

In recognition of the special quarantine risks associated with Australia's sparsely populated northern coastline, AQIS conducts an animal disease surveillance program as an integral component of the Northern Australia Quarantine Strategy (NAQS). The NAQS surveillance program provides early warning of disease threats to livestock industries, and in some cases human health. NAQS surveillance activities include both offshore and onshore components. Table 10 summarises NAQS activity over the past five quarters.

Table 10: Summary of recent NAQS activity

	Q1-97		Q2-97		Q3-97		Q4-97		Q1-98		Notes
	Num	Pos	Num	Pos	Num	Pos	Num	Pos	Num	Pos	
Avian influenza	0	0	48	4	0	0	0	0	0	0	a
Aujeszky's disease	0	0	25	0	14	0	0	0	0	0	
Classical swine fever	0	0	50	0	64	0	50	0	9	0	
Infectious bursal disease	0	0	45	2	0	0	0	0	0	0	a
Japanese encephalitis	319	3	320	2	128	0	209	0	450	27	b
Newcastle disease	0	0	48	0	0	0	0	0	0	0	
Porcine reproductive and respiratory syndrome	0	0	26	0	14	0	0	0	0	0	
Screw-worm fly	0	0	2	0	1	0	2	0	0	0	
Swine influenza	0	0	25	0	14	0	0	0	0	0	
Surra	83	0	105	0	102	0	136	0	34	0	
Canine ehrlichiosis	0	0	29	0	30	0	40	0	0	0	
Transmissible gastroenteritis	0	0	25	0	14	0	0	0	0	0	
Trichinellosis	5	0	6	0	0	0	0	0	7	0	

Notes

a Serologically positive migratory birds that show no clinical signs of disease are occasionally found during NAQS surveys (in this case, wandering whistle ducks trapped on Cape York Peninsula). Nevertheless, Australian domestic poultry flocks are free of these diseases.

b In previous years, sentinel sites on islands in the Torres Strait, but not on the Australian mainland, have shown seroconversions during the latter part of the wet season (January–April). In late March this year

seroconversions occurred at a number of sentinel sites on islands in the Torres Strait (Saibai, Badu, Moa and Mabuiag), and for the first time on the mainland, near Bamaga, at the tip of Cape York Peninsula.

There were two human cases of the disease in March this year — a 12-year-old unvaccinated child on Badu Island in the Torres Strait, and a professional fisherman, at the mouth of the Mitchell River on remote western Cape York Peninsula. Both patients have recovered.

Further pig testing and surveillance is being carried out. So far, seropositive pigs have been detected on Stephens, Darnley, Hammond and Prince of Wales Islands and in a single herd of domesticated wild pigs surveyed in the Mitchell River area. In all cases the pigs that seroconverted have shown no signs of disease. Further details will be provided in the next issue of this newsletter.

Contact: David Banks, AQIS

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 11 summarises *Salmonella* isolations from animals, notified to the NSSS for the quarter.

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

Table 11: Salmonella notifications, 1 January to 31 March 1998

Serovars	avian	bovine	canine	equine	feline	ovine	porcine	other	Total
<i>S. bovismorbificans</i>	0	10	1	0	0	0	0	0	11
<i>S. dublin</i>	0	24	0	0	0	0	0	0	24
<i>S. infantis</i>	0	0	1	0	0	0	0	0	1
<i>S. typhimurium</i>	12	42	3	3	0	2	1	5	68
Other	36	23	8	4	1	0	7	32	111
Total	48	99	13	7	1	2	8	37	215

AAHC has moved:

Australian Animal Health Council Limited
Suite 15
26–28 Napier Close
Deakin ACT 2600

Phone: 02 6232 5522

Fax: 02 6232 5511

E-Mail: aahc@ozemail.com.au

Change of name

The section in the Commonwealth Department of
Primary Industries and Energy

Animal Disease/Incidents Section

has been renamed the

Emergency Disease Strategies Section.

Phone number and address remain unchanged.

National Residue Survey

Table 12 summarises the results for the quarter. Information about the National Residue Survey (NRS) can be found on the worldwide web at <http://www.brs.gov.au/residues/residues.html> where there are sections on:

- NRS Business Plan 1997–98;
- NRS 1996 Randomised Sampling Results;
- recent publications;
- frequently asked questions;
- information for laboratories; and
- associated web sites.

Recent publications by the NRS include

- NRS Annual report 1996–97;
- Report on the 1996 NRS Results;
- Report on the 1995 NRS Results; and
- Report on the 1993–4 NRS Results.

Copies available from Dr Rusty Branford, NRS, PO Box E11, Kingston, ACT 2604

Phone 02 6272 5096

Fax 02 6272 4023

E-mail Rusty.Branford@brs.gov.au

Contributed by National Residue Survey, Bureau of

Table 12: National Residue Survey, 1 January to 31 March 1998

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

	NSW	NT	QLD	SA	TAS	VIC	WA	AUST
Antimicrobials								
cattle	0 128	0 1	0 109	0 30	0 11	0 76	0 12	0 367
pigs	2 169	0 0	4 73	0 39	0 2	4 64	1 29	11 376
poultry	0 0	0 0	0 1	0 0	0 0	0 0	0 0	0 1
sheep	0 58	0 0	0 8	0 22	0 3	0 31	0 33	0 155
other	0 6	0 0	0 14	0 3	0 0	0 3	0 2	0 28
Total	2 361	0 1	4 205	0 94	0 16	4 174	1 76	11 927
Anthelmintics								
cattle	0 89	0 0	0 104	0 14	0 12	0 73	0 13	0 305
pigs	0 34	0 0	0 14	0 3	0 1	0 14	0 6	0 72
sheep	0 147	0 0	0 12	1 62	0 8	0 105	0 66	1 400
Total	0 270	0 0	0 130	1 79	0 21	0 192	0 85	1 777
Growth promotants								
cattle	0 167	0 1	0 147	0 24	0 18	0 114	0 46	0 517
pigs	0 11	0 0	0 8	0 4	0 0	0 3	0 2	0 28
sheep	0 95	0 0	0 14	0 56	0 12	0 80	0 72	0 329
other	0 1	0 1	0 12	0 3	0 0	0 3	0 0	0 20
Total	0 274	0 2	0 181	0 87	0 30	0 200	0 120	0 894
Insecticides								
cattle	0 394	0 3	0 365	0 68	0 53	0 285	0 71	0 1239
feral	0 0	0 0	0 1	0 0	0 0	0 0	0 0	0 1
pigs	1 94	0 0	0 37	1 17	0 0	0 38	0 12	2 198
poultry	0 0	0 0	0 1	0 0	0 0	0 0	0 0	0 1
sheep	0 298	0 0	0 39	0 107	0 13	1 224	0 134	1 815
other	0 14	0 0	0 17	0 5	0 0	0 4	0 5	0 45
Total	1 800	0 3	0 460	1 197	0 66	1 551	0 222	3 2299
Metals								
cattle	1 17	0 0	0 20	0 3	0 3	0 21	0 1	1 65
pigs	0 20	0 0	1 4	0 4	0 0	0 7	0 2	1 37
sheep	2 30	0 0	0 3	4 15	0 3	2 19	4 11	12 81
other	0 0	0 1	0 0	0 0	0 0	0 0	0 1	0 2
Total	3 67	0 1	1 27	4 22	0 6	2 47	4 15	14 185

Suspect Exotic Disease Investigations

There were 23 exotic disease investigations reported during the quarter, as shown in Table 13.

Table 13: Suspect exotic disease investigations

Disease	Species	State	Reponse (key below)	Finding
Bluetongue	ovine	NSW	2	Negative
Avian influenza	avian	NSW	5	Coccidiosis
Newcastle disease	avian	NSW	0	False alarm
Avian influenza	avian	NSW	2	Negative
Avian influenza	avian	NSW	2	Negative
Rabies	feline	NSW	2	Hepatic lipidosis and leucoencephalomalacia
Avian influenza	avian	NT	2	Fowl cholera
Bluetongue	ovine	QLD	1	Photosensitisation
Epizootic lymphangitis	equine	QLD	2	Investigation not yet complete
Avian influenza	avian	QLD	3	Marek's disease and mycoplasma
Bluetongue	ovine	QLD	2	Bluetongue excluded
New World screw-worm	canine	QLD	2	<i>Lucilia cuprina</i>
Bovine spongiform encephalopathy	bovine	QLD	2	Sporadic bovine encephalomyelitis
Horse pox	equine	QLD	2	Papilloma (Papova) virus
Avian influenza	avian	QLD	3	Coccidiosis
Bat lyssavirus	fauna	TAS	3	Negative
Avian influenza	avian	VIC	1	Chronic respiratory disease
Avian influenza	avian	VIC	1	Botulism
Bluetongue	ovine	WA	2	Negative
Vesicular stomatitis	bovine	WA	2	Negative
Newcastle disease	avian	WA	2	Negative
Duck virus enteritis	avian	WA	2	Negative
Bat lyssavirus	fauna	WA	3	Negative

KEY:

Highest level of 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

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