ANIMAL HEALTH SURVEILLANCE QUARTERLY
Newsletter of Australia's National Animal Health Information System

Volume 3 Issue 3
Quarterly Report for 1 July to 30 September 1998

Preface

This issue describes the recent Newcastle disease outbreak in New South Wales. The prompt response following the diagnosis and the comprehensive investigation that followed again demonstrated the effectiveness and capability of Australia's animal health services.

This issue also summarises the findings of the 1998 National Workshop on foot-and-mouth disease, a national workshop on horse disease emergencies in the racing industry, changes to the Board of the Australian Animal Health Council, restructuring of the Commonwealth Department of Primary Industries and Energy, and provides highlights of disease surveillance activities and items of interest from States and the Northern Territory.

GARDNER MURRAY
Australian Chief Veterinary Officer

Outbreak of virulent Newcastle disease

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

Outbreak description

Farm 1

Farm 1 was a mixed poultry enterprise, running about 85 000 caged layers, 1400 free-range layers, 77 000 broilers, 10 500 pullets, 10 ostriches, seven geese and one duck. Feral pigeons were also housed on the property.

Mortalities first occurred in poultry on Farm 1 in June 1998. The mortalities were restricted to a particular batch of layers, and Marek's disease was diagnosed on the basis of clinical signs and gross lesions. On 6 August, mortalities started in a different strain of birds, recently introduced into the same sheds where the previous mortalities occurred. Marek's disease was again diagnosed as the cause.

Losses continued over the next few weeks, with pyrexia, peritonitis, empty guts, soft-shelled or shell-less eggs the dominant features in the sick and dead birds. Fowl cholera and avian influenza were considered as possible diagnoses but were excluded by laboratory testing. Lymphoid infiltrates consistent with Marek's disease were reported on histopathological examination of specimens submitted to the veterinary laboratory at Menangle.

By early September, the outbreak had spread to the broilers and pullets. Clinical signs were typical of neurotropic ND with torticollis and flaccid paralysis occurring in a number of sick birds. The cumulative mortality rate reached nearly 15% in the pullets and up to 50% in some broiler sheds before the remaining birds were destroyed.

Contents

When ND was suspected in early September, retrospective ND serology was done on all available blood samples held in storage since early August. ND titres in layers were consistent with infection with endemic V4 strain (titres of 256 or below) until 20 August. The first high titres (two samples with a titre of 2048), suggestive of infection with virulent virus, were in samples collected on 26 August. Virulent ND virus was subsequently isolated from samples collected on 10 September.

There was no evidence of virulent ND infection in feral pigeons, ostriches, geese or a duck on Farm 1. All birds on Farm 1 were destroyed and buried by 29 September 1998.

Farm 2

Farm 2 was a commercial layer enterprise, running about 19 000 caged and free-range hens. The owner of Farm 2 had recently purchased eggs from Farm 1 to make up contract requirements, receiving shipments on 7 and 21 August. Sickness and deaths on Farm 2 commenced on 11 September, in a layer shed adjacent to the egg packing shed. Clinical signs were similar to those observed on Farm 1, and virulent ND was suspected. A virus identical to that isolated from poultry on Farm 1 was isolated from samples submitted from Farm 2. There was no evidence of virulent ND infection in peacocks, ducks and pigeons that were also present on Farm 2.

Farm 3

Farm 3 was a free-range broiler enterprise, running about 2500 broilers. On 18 August, 700 young broilers were purchased from Farm 1.

Significant losses occurred in these birds after arrival, and by 22 September only 80 of the original 700 broilers remained. Virulent ND could not be confirmed from samples collected at this time. However, retrospective testing of tissues from a previous investigation on Farm 3 confirmed the presence of the virulent ND virus, with this virus being identical to isolates from Farms 1 and 2.

There was no evidence of spread of ND to other birds in adjoining pens on this property. Galahs frequenting the pens and in contact with the poultry were tested for ND, with negative results.

Response

After virulent ND was confirmed on 18 September, the Commonwealth–States Cost-sharing Agreement was invoked to fund and share the cost of eradication between all State/Territories and the Commonwealth. An eradication plan was implemented in accordance with the Australian Veterinary Emergency Plan (AUSVETPLAN) and the State Disaster Plan (DISPLAN), with NSW Agriculture as the lead agency.

NSW Agriculture established a Local Disease Control Centre and mobilised more than 150 people, including staff from Rural Lands Protection Boards, other States and Territories and the Australian Quarantine Inspection Service (AQIS). A State Disease Control Headquarters was established in Orange.

Restricted and control zones were declared covering the greater Sydney area and Rylstone Shire, and movement controls within these areas were implemented. More stringent movement restrictions were also imposed within 3 km of the infected flocks. All three infected farms were placed under strict quarantine and slaughter and disposal of stock was completed on 29 September. Preliminary assessments indicate that the full clean-up and decontamination of the infected properties could be a protracted and very expensive exercise.

A comprehensive tracing and surveillance program was undertaken, and at least two rounds of blood testing of all flocks within a 10 km radius of the infected properties have been completed. Extensive surveillance testing was also undertaken throughout the rest of the restricted and control areas. No further cases of ND were found in more than 100 flocks under surveillance.

Epidemiology

The intracerebral pathogenicity indexes for viruses isolated from these flocks ranged from 1.64 to 1.9, confirming them as highly virulent. Polymerase chain reaction (PCR) and sequence analysis carried out on these isolates were also consistent with virulent ND virus.

Although the virus could not be isolated from fresh samples from Farm 3, immunoperoxidase testing of fixed tissues was positive, and PCR and sequence analysis retrospectively confirmed the presence of virulent ND virus in the tissues.

The isolates from Farms 1 and 2 were found to be genotypically identical, and had 99% homology to an endemic non-virulent Australian strain of NDV

recently isolated from a case of late broiler respiratory disease complex in poultry. These isolates were also quite different genetically from overseas isolates of virulent ND virus that have been sequenced.

There is no evidence to implicate wild birds in the epidemiology of this outbreak. Up to 23 October, 117 wild birds from various locations had been tested for ND, with negative results. Pigeons, galahs and free-ranging poultry on the three farms have been intensively investigated with no evidence of ND.

There is thus strong evidence that the virus was not an exotic strain brought into the country, but was a mutation of an endemic strain found in poultry in Australia. This new strain is highly virulent, but relatively slow spreading, particularly among caged layers. It appears most likely that the mutation occurred in poultry on Farm 1, and then spread to Farms 2 and 3 by movement of infected poultry.

Summary

Virulent ND was confirmed on three properties in New South Wales.

It appears that the outbreaks resulted from the mutation of an endemic, lentogenic ND virus into a highly pathogenic virus of relatively low transmissibility on the first infected property. There is no evidence for involvement of wild birds in these outbreaks.

Extensive tracing and surveillance on commercial poultry and wild birds in the restricted and control areas has confirmed that the disease was confined to the three infected flocks. All exposed birds have now been destroyed and decontamination has commenced.

1998 National Workshop on Foot-and-Mouth Disease

In September, the Office of the Australian Chief Veterinary Officer convened a national workshop of high level industry and government representatives to review Australian measures against foot-and-mouth disease (FMD). This was the third in a series of workshops, the first in 1992 and the second in 1994, aimed at improving our understanding of FMD, the risk posed to Australia, and how best to manage an emergency should FMD enter Australia. The workshop was supported by the Australian Animal Health Council Ltd (AAHC), Cattle Council of Australia and Australian Meat Council.

Since the last workshop in 1994, the international FMD standards set by the Office International des Epizooties (OIE) have changed, particularly in relation to zoning policy. Recently, new strains of FMD have emerged and spread from Iran to Turkey as well as continuing outbreaks of other strains throughout South-East Asia. There is currently a major OIE campaign to eradicate FMD from South-East Asia with Laurie Gleeson of the Australian Animal Health Laboratory (AAHL) leadering the OIE Regional Coordination Unit. Of particular concern to Australia is the recent economic downturn in Asia and the potential for downgrading of animal health infrastructure affecting FMD control in the region.

These developments, particularly the changing risk profile of FMD, made it timely to review Australian FMD policy. The objectives of the 1998 FMD workshop were to:

- review the most recent information on the global FMD situation, focusing on South-East Asia;
- review the implementation of the 1995 National Integrated Strategy on FMD (developed at the December 1994 FMD workshop), specifically to:
  - consider the resource implications and associated policy issues of implementing zoning in the event of an incursion of FMD
  - develop a nationally agreed policy on the role, if any, of vaccination in the AUSVETPLAN FMD response plan, and if vaccine has a role, to discuss options for sourcing it; and
- consider other elements of the 1995 strategy in light of changing risk factors resulting from the economic downturn in South-East Asia and the emergence of new strains of FMD virus.

Professor Watson Sung, Secretary General of the Bureau of Animal and Plant Health Inspection and Quarantine of Taiwan, and Dr Barry O'Neil, the New Zealand Chief Veterinary Officer, gave an international perspective to the workshop.

As with the 1994 workshop, the most important issues were vaccination and zoning policies. To enable governments and industry to reach a national position, the Bureau of Resource Sciences (BRS) had undertaken studies on vaccination and on surveillance required to support zoning. The work was funded by the former Exotic Animal Diseases Preparedness Consultative Council (EXANDIS). The reports were completed and circulated to peak industry bodies and governments in March this year. This year's workshop provided a national forum to consider these important options for FMD zoning and vaccination policies in the Australian context.

The recommendations of the BRS studies were refined and subsequently endorsed by both government and industry at the workshop. These recommendations were that:

Vaccination

1. In the event of an incursion of FMD, 'stamping out without vaccination' remain the preferred AUSVETPLAN strategy.
2. Australia remain a member of the International Vaccine Bank (IVB) for the immediate future but review the cost–benefit of IVB and other vaccine sourcing options. A small review team, in consultation with New Zealand, will complete this review by May 1999 in time for the next IVB meeting.
3. A dedicated workshop and a training exercise be conducted to address the special operational requirements of high risk enterprises such as large breeding piggeries.
4. FMD vaccination be retained as an emergency option and a 'decision support model' for vaccination be developed in line with OIE approaches.
5. AAHL develop tests to distinguish between vaccinated and infected animals and develop the capability to characterise the genome of all known strains.

Zoning

1. In the event of an incursion of FMD, those States/Territories not directly affected collectively institute appropriate surveillance systems to demonstrate their freedom from FMD in accordance with OIE Code definitions and articles and the requirements of Australia's major trading partners.
2. In the event of an incursion, that surveillance in FMD-free areas of Australia be based on protocols developed and added to AUSVETPLAN, including standardised reporting, investigations, awareness, surveys, clinical examination and serological testing.
3. That technology transfer from AAHL to State/ Territory laboratories be undertaken rapidly at the time of any outbreak to support national serological surveillance activities.
4. A Market Assurance Team be assembled soon after a confirmed FMD outbreak to be responsible for planning, data collection and preparing the case for zoning and resumption of trade from FMD-free zones.
5. Australia continue to seek greater specification from the OIE Code Commission and Animal Health and Quarantine Quadrilateral Discussion Group of a suitable surveillance program for the implementation of zoning for FMD.

The 1998 National FMD Workshop was a success in that it provided the opportunity over two days for government and industry to discuss, consider and agree on a work program for a national approach to ensure Australia has sound prevention, preparedness and response systems in place to deal with an incursion of FMD.

Gardner Murray
Chief Veterinary Officer

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, Emergency Diseases Strategy Section, AFFA.

DPIE becomes AFFA

The reorganisation of Commonwealth Government agencies following the October election affected the Department of Primary Industries and Energy (DPIE) in several ways. The most obvious is the change of name to Department of Agriculture, Fisheries and Forestry, which reflects the movement of the resources and energy components to another department. The department will use the acronym AFFA (Agriculture, Fisheries and Forestry — Australia) in less formal contexts.

The AFFA Executive Board took the opportunity presented by the changes to reorganise the components servicing animal and plant health and food safety within the Department. The result is a new group from the relevant components (but not necessarily all) of the former DPIE structure:

- Office of the Chief Veterinary Officer (from the Australian Quarantine Inspection Service, AQIS)
- Office of the Chief Plant Protection Officer (from AQIS)
- Secretariat functions and emergency disease preparedness (from Livestock and Pastoral Division)
- Plant health (from Crops Division)
- Aquatic animal health (from Fisheries and Aquaculture Branch)
- Australian Plague Locust Commission
- Animal and Plant Health Branch (from the former Bureau of Resources Sciences, BRS)
- National Residue Survey (from BRS)
- Codex, food safety and standards functions (from the Food Policy Branch of AQIS)

The finer details are still being worked out, but the various elements will function as two new National Offices:

- National Office of Animal and Plant Health; and
- National Office of Food Safety.

A Scientific Assessment Branch, which is basically the Animal and Plant Health Branch of the former BRS, will provide professionally independent scientific and technical advice to both National Offices.

Except for those functions already mentioned, functions relating to animal and plant imports and exports will remain within AQIS.

Individual phones numbers should not change. The 'dpie' of email addresses has changed to 'affa', (firstname.lastname@affa.gov.au). For staff in AQIS, the 'dpie' has been replaced by 'aqis'. Both old and new addresses will work for the next few months. The Department's web address has changed to http://www.affa.gov.au but the NAHIS website will remain at http://www.brs.gov.au/aphb/au for the time being.

New Board for AAHC

The Australian Animal Health Council Ltd (AAHC) has announced the election of a new Board of Directors following its Annual General Meeting held in Canberra on 22 October 1998.

Dr Raoul Nieper of Bridgeman Downs, Queensland, has been appointed Chairperson of the Board. Dr Nieper was formerly Director General of the Queensland Department of Primary Industries. He has previously held appointments as Director and Deputy Chair Queensland Dairy Industry Authority, Director and Deputy Chair Livestock and Meat Authority of Queensland, Foundation Director Landmarc, Director Grainco Limited and Director Queensland Rural Adjustment Authority.

The other AAHC Board appointments are:

Dr Lex Carroll of Rolleston, Queensland, who is involved in farming, beef production and processing for export. Dr Carroll is a Director of Brigalow Beef Company and is an Executive Member of the Cattle Council of Australia and a member of the Cattlemen's Union of Australia.

Mrs Keryl Enright of Mt Barker, Western Australia, is an inaugural Member of the AAHC Board and operates a mixed enterprise of merino sheep, damara sheep, beef cattle and cereal grains. Mrs Enright is Chairperson of the Agricultural Board WA, a member of the Rural Adjustment and Finance Corporation and a Board Member of the Vertebrate Biocontrol Centre.

Dr Ian McCausland of Wollstonecraft, NSW, was formerly the Managing Director of the Meat Research Corporation and has now established a consulting practice McCausland Associates. Dr McCausland was elected to the Australian Academy of Technological Sciences and Engineering in 1998 for the successful implementation of research and development for the meat and livestock industry.

Mr Michael Nicholls of Gunning, NSW, is a partner in a superfine wool growing enterprise and the Managing Partner of a management and engineering consulting business. He is a member of the Wool Council of Australia and represented the Wool Council on the CSIRO Australian Animal Health Laboratory Liaison Committee. Mr Nicholls is a General Councillor and member of the Wool Committee of the NSW Farmers Association and is the current Chairman of the NSW Ovine Johne's Disease Advisory Committee.

Mr Harvey Parker of Baxter, Victoria, operates a small thoroughbred breeding operation and cattle property. He is a non-executive director to the Boards of Employment National Limited, AAG Holdings Limited, Datacom Services Australia Pty Ltd and Chairman of Pacific Turbine Pty Ltd. Mr Parker is a member of the Victorian Amateur Turf Club and the Queensland Turf Club, a member of the Victorian Blood Horse Breeders Association and Member of the New Zealand Thoroughbred Breeders Association.

Mr Tim Roseby of Canberra, ACT, is an inaugural Member of the AAHC Board, and Head of the Agricultural Industries Division in the Department of Agriculture, Forestry and Fisheries. Mr Roseby has also held appointments as a Director of the Grain Legumes Research Council and of the Dairy Research and Development Corporation.

Further Information:
Mr Paul Crew
Phone: (02) 6232 5522
Fax: (02) 6232 5511

Workshop on horse disease emergencies

In September 1998, the Racing Science Centre and the Queensland Principal Club hosted a national workshop to consider the development of an equine emergency disease strategy for the Australian racing industry. The Queensland Principal Club is the peak industry body for thoroughbred racing in Queensland and the Racing Science Centre is a government-owned entity that provides scientific services to the three codes of racing in Queensland. Financial support was received from the Queensland Principal Club, the Division of Racing within the Department of Tourism Sport and Racing, and AAHC.

The workshop was convened in response to advice that Japanese encephalitis (JE) virus had been isolated on the far northern Australian mainland this year (see *AHSQ* Vol. 3 No. 2). JE virus can affect both humans and horses and was previously considered exotic to Australia. The Australian racing industry has been fortunate that many of the serious diseases of horses that are prevalent in other parts of the world do not exist here. Despite Australia's effective quarantine programs, changing environmental factors and the globalisation of the racing industry have increased the risk of exotic equine diseases entering the country. The consequences of certain diseases entering the country could be devastating to the racing industry, the Australian economy and the Australian community. Horse-racing is considered Australia's fourth largest industry and it is appropriate for the racing industry to develop an emergency disease management plan.

The 40 delegates included animal health and quarantine professionals from the (then) Commonwealth Department of Primary Industries and Energy (including the Australian Quarantine Inspection Service) and representatives from Queensland Health and the State departments of primary industries, agriculture or natural resources from Queensland, New South Wales and Victoria. The Principal Racing Club from each Australian State, the Australian Trainers' Association, the Australian Equine Veterinary Association and the Australian Racing Board were represented. Delegates from AAHC, the Queensland Animal Health Council and the Australian Horse Industry Council were also present. Dr Ron Jensen, Chairman of the International Group of Specialist Racing Veterinarians and Senior Veterinarian with the California Horseracing Board in the United States attended.

The goals of the workshop were to:

- identify and understand the major exotic disease risks to the Australian racehorse;
- understand the implications of an exotic disease outbreak for the Australian racing industry; and
- foster a racing industry strategy to develop a management plan to deal with equine disease emergencies.

Over two days, the delegates:

- examined the management and outcomes of recent equine disease emergencies, including equine morbillivirus;
- were informed about the current risk and consequences of exotic disease and the implications of implementing AUSVETPLAN;
- considered the adequacy and organisation of veterinary services to the Australian racing industry;
- identified strategic options to improve preparedness of the racing industry to manage equine disease emergencies;
- provided guidance from the racing industry on its preferences for communication with all stakeholders during a disease crisis; and
- considered the integration of the racing industry with the existing management infrastructure for animal diseases.

The delegates were advised that a number of horse diseases were foreign to Australia and would have a significant economic and social impact if they were to enter the country:

- Vesicular stomatitis (significant economic losses);
- Equine influenza (total cancellation of all horse events, very large economic losses, and additional costs from a major vaccination campaign);
- Equine viral encephalitides (major economic and social impact);
- Contagious equine metritis (significant economic losses); and
- African horse sickness (devastating economic losses and large numbers of horse deaths, cancellation of all horse events, and many years to recover).

Delegates participated in simulated outbreaks of two dissimilar equine infectious diseases — Japanese encephalitis, which is an imminent threat and transmitted by mosquitoes; and equine influenza, which is rapidly spread by horse-to-horse contact.

The workshop achieved its goals and brought the leaders of the Australian racing industry and senior representatives of Australia's animal health infrastructure together. The participants unanimously agreed that the racing industry must be better prepared to respond to emergency disease in horses. A working group consisting of a stipendiary steward, trainer, veterinary surgeon in private practice, racing regulatory veterinarian, quarantine official and a representative from the Australian Racing Board was appointed to prepare a draft management plan and to make recommendations on the following priorities:

- integration of the racing industry into the Australian animal health infrastructure to ensure a comprehensive and coordinated response to emergencies;
- development of systems of rapid communication within the industry;
- use of established networks for the surveillance of horses during a disease emergency;
- fostering an alert, informed racing industry to encourage early recognition and rapid reporting of serious diseases;
- facilitating appropriate changes to the husbandry and veterinary treatment of racehorses to minimise the risk of establishment and spread of major diseases;
- ensuring the effective organisation of the Australian racing industry and racing regulatory veterinarians; and
- providing funding to ensure the optimum preparedness of the Australian racing industry for emergency disease outbreaks.

The working group anticipates that a final report for consideration by the Australian Racing Board will be available by September 1999.

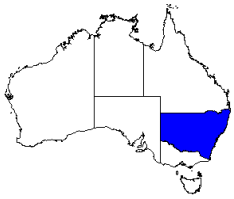
Further information is available from:
Racing Science Centre
PO Box 513
Albion Qld 4010
Phone: 07 3862 1477
Fax: 07 3857 0035
E-mail: auerd@citec.qld.gov.au

Contributed by David Auer, Racing Science Centre

State and Territory Reports

New South Wales

Contributed by:
Evan Sergeant
NSW Agriculture



Anthrax

Six anthrax investigations — three in sheep and three in cattle — were carried out, all negative.

Bovine Johne's Disease Market Assurance Program

There are now 603 herds enrolled in the Bovine Johne's Disease market assurance program (MAP). The numbers in each status category for those herds for which no infection has been found are 272 TN1, 103 MN1, 82 TN2, and 49 MN2. A further 31 have a status of not assessed (NA), with the remainder awaiting results. There have been 177 herds that have undergone second round testing with a total of 16 270 cattle. There have been 133 reactors in 94 herds in round one testing, and 14 reactors from 11 herds in second round testing. The reactor rate remains at about 0.2%. Of the reactor herds, 83 have been resolved with three found to be infected. Seventy percent of the herds enrolled are beef and 66% are studs.

Australian Sheep Johne's Disease Market Assurance Program

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

By October, 210 flocks were enrolled in the Ovine Johne's Disease (OJD) MAP, a considerable increase from the 79 flocks in July. The main reason for the large increase in flocks enrolled in the program is that testing has been subsidised by the Interim Surveillance and Research Program . A few flocks have recently been diagnosed with OJD while undergoing MAP testing. One assured flock with a status of MN1 was found to be infected with OJD at the required annual post mortem examination of sheep with lower condition scores.

Ovine Johne's disease durveillance

On 31 July 1998, the Agriculture and Resources Ministerial Council of Australia and New Zealand (ARMCANZ) endorsed the National OJD Control and Evaluation Program with a budget of $40 million over six years. Testing under the ISP will continue and will be followed by surveillance testing under the six-year program. Funding for the ongoing program is still being negotiated.

At 30 September there are 345 infected (IN) properties, 333 Suspect (SU) properties and 477 under surveillance (US) properties in NSW. By comparison, in June 1997 there were 156 IN, 89 SU and 9 US properties. The large increase is primarily due to the increased level of tracing and surveillance under ISP. This increased level of tracing and surveillance is being continued. The increase in US flocks is a result of a policy change, so that neighbours of infected properties are now given the status of 'under surveillance'.

Ovine brucellosis

There are 1481 flocks enrolled in the Ovine Brucellosis Accreditation Scheme. These include 617 Merino, 258 Poll Dorset and 190 Border Leicester flocks. The number of flocks accredited remains steady, with about the same number of flocks entering and leaving the program.

Brucella mellitensis

A case of *Brucella mellitensis* was detected in a human who had recently returned from a country in which the disease is endemic.

Cattle tick control program

A tick infestation was detected near Tweed Heads in mid-August, unusual for that time of year. It seems that cattle ticks were still hatching on the pasture in winter because of the mild conditions.

A second case of suspected amitraz resistance was detected — for the first time west of the Richmond Range. Resistance is suspected on the basis of the larval packet test but has not yet been confirmed by laboratory tests on cattle. CSIRO, Long Pocket, is undertaking further investigations.

TSE surveillance

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

Submission of samples from eligible cases has increased since the introduction of the program. The expected introduction of incentive payments for producers and veterinarians should further increase the effectiveness of this program. The annual target for NSW, to comply with OIE requirements, is about 100 cattle brains and 150 sheep brains. The achievement of this target will require good cooperation by producers and veterinarians.

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

Bat viruses

During the quarter, three fruit bats and one micro-bat were examined for evidence of Australian bat lyssavirus infection, with negative results. To date, 169 fruit bats and 40 micro-bats have been examined in NSW, with 10 fruit bats found to be infected.

Bee diseases

There were only 115 tests for American foulbrood this quarter, compared to 319 in the corresponding quarter last year. The reduced level of testing this year is due to a reduction in the number of honey survey tests, and a reduced amount of regulatory testing. Of the 44 positive reports, 29 were new cases and the remainder were repeat tests on previously confirmed cases. Eighteen of the new cases had positive reports during 1997–98.

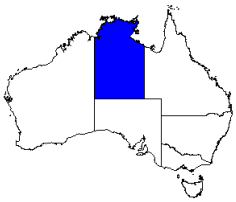
One report of chalkbrood was received during the quarter.

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 in Australia.

Northern Territory



Contributed by:
Diana Pinch
NT DPIF

Asian bees

The Asian Bee Eradication Program continued, with no further detection of Asian bees (*Apis cerana*) and no detection of exotic mites. The monitoring program will continue until June next year, unless there are further detections.

Cattle

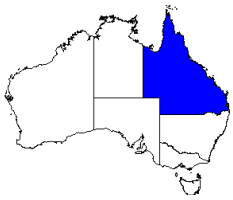
Investigations are being carried out into cattle abortions on a property in the Tennant Creek region. At least eight abortions in heifers have been directly observed by the owners in the past 12 months, and the heifer calving rate is much lower than that of the cows. The investigation has included testing for various diseases including the exotic disease bovine brucellosis. An aborting cow and 14 companions tested negative from a serial bleed, as did 100 mature cows tested by complement fixation test for bovine brucellosis. Investigations are continuing to determine the cause of the abortions.

Lesions in the bronchial and mediastinal lymph nodes from an aged cow, sent to slaughter in July from a property in the Katherine region, were consistent with tuberculosis. After histopathological diagnosis, Berrimah Veterinary Laboratories sent fresh specimens from these cases to the Australian Reference Laboratory for Bovine Tuberculosis for culture. The detection of this infected animal at slaughter again illustrates the value of the National Granuloma Submission Program.

Pigs

Sudden deaths in 10-day-old well-grown piglets were investigated by post mortem and bacteriological examinations. The findings were consistent with colibacillosis. Cultures of the organism were sent to the Microbiological Diagnostic Unit at the University of Melbourne to identify the toxigenic strain of *E. coli* involved in this disease episode.

Queensland



Contributed by:
Gavin Ramsay
Queensland DPI

Mycobacteriosis in pigs

Intensive monitoring of pig carcases was carried out at abattoirs in south Queensland following confirmation of *Mycobacterium avium* as the cause of multiple abscesses in mesenteric lymph nodes of pigs. The affected pigs came from three properties in south Queensland. The three farms were grower farms that sourced stock from the same breeder farm. The breeder farm and two of the growers used ecoshelters (a form of deep litter system); the other did not. Intensive monitoring did not detect cases of infection with *M. avium* at any other piggeries. Meat inspectors reported that lesions in mesenteric lymph nodes are rarely detected in pigs, adding further evidence that the infection is not widespread in Queensland's pig population. Further studies are being carried out to determine the source of the infection.

Warm, wet winter

A relatively warm and wet winter has led to several unusual disease events, including an increase in the number of cases of the vector-borne diseases bovine ephemeral fever and tick fever, continuing problems with internal parasitism in goats, and the presence of unusually large populations of buffalo fly (*Haematobia irritans exigua*).

Bovine ephemeral fever

An increase in the number of cases of bovine ephemeral fever was reported this quarter, with the disease occurring throughout winter in central Queensland and spreading towards southern parts of the State in September. Most animals affected by the disease are less than three years old, and clinical disease is most severe in fattening animals two to three years old. The last few seasons have been dry with relatively low activity of potential vector populations. This has led to a gap in exposure to ephemeral fever virus and resultant low levels of herd immunity in animals two to three years old. Previously exposed older animals appear to be immune the virus, and previously exposed younger animals are showing less severe clinical signs.

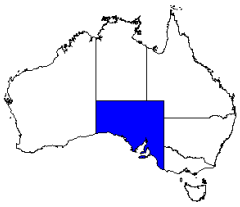
Buffalo fly

Cattle producers have instituted early treatments to prevent a build-up of buffalo fly populations in southern and central Queensland. Mild winter conditions with above average temperatures and rainfall in most of Queensland have enabled buffalo fly to overwinter in many parts of the State.

Review of animal health surveillance

In September, a review of animal health surveillance in the State was conducted by Gavin Ramsay (DPI, review leader), Paul Wright (Queensland Animal Health Council and grazier), Graeme Garner (BRS), and David Pitt (DPI). The review examined in detail current animal health surveillance activities in Queensland and made recommendations to improve that surveillance. In particular, the review team made recommendations to improve analysis, interpretation and communication of surveillance data already being collected in the State. As a result of the review, DPI will be establishing a Disease Intelligence Group to help set priorities in animal health surveillance in Queensland and ensure future needs for animal health information are met.

South Australia



Contributed by:
Kim Critchley
Primary Industries SA

Ovine Johne's disease

OJD has now been detected on 17 properties on Kangaroo Island. An intensive surveillance program has been put in place with active tracing and testing of contact flocks. Movement controls have been instituted and producers moving stock off the island are required to supply consignment details to allow tracing. No infection has been found on mainland properties that may have sourced stock from the island in the past few years.

Dolphin deaths in the Port River

Adult dolphins were found dead with gunshot wounds. A dead one-year-old juvenile was found a few weeks later with a suspicion it too may have been shot. The autopsy finding was that death was due to extensive mycotic pneumonitis.

Phalaris toxicity

Sheep and cattle suffering from 'phalaris staggers' have been reported and confirmed from the south-east of the State.

Mycotic infection in King George Whiting

Wild-captured fish penned for further growing exhibited small ulcers on the skin. Dissection of the fish revealed extensive invasion of the body by a fungus. The fungus was found in bone, muscle and kidney as well as the skin, and was identified as *Exophiala.*

Copper toxicity

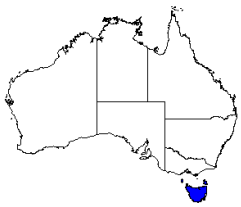
A number of deaths in a sheep flock were attributed to copper toxicity. There had been no treatment with copper supplements. The deaths are thought to be due to possible liver damage followed by movement to improved pasture.

Actinobacillus suis in pigs

Actinobacillus suis was cultured from piglets about three weeks old dying from a septicaemia.

Tasmania

Contributed by:
Rod Andrewartha
DPIWE, Tasmania



Exotic disease exclusion

All 12 three-year-old domestic fowl in a pen died suddenly within a 24-hour period. The birds appeared to be in good health until found dead. The main finding was the presence of a gruel-like substance in the crops and subcutaneous oedema in the neck. Material was sent to the Australian Animal Health Laboratory (AAHL) for avian influenza exclusion. The sudden mass deaths were suggestive of a toxic cause, but no recognised toxins were used or held in the pen area. 'Play dough' had been discarded into the birds' scrap feed bin the day before the losses. In addition, the water vessel for the birds required regular filling as it would run out. 'Play dough' contains a large amount of salt, which in association with water deprivation is considered to have precipitated acute salt poisoning. Subcutaneous oedema is a finding in salt poisoning in fowls.

Abortions in sheep

Late abortions, stillbirths and perinatal lamb mortality due to *Toxoplasma* were seen in ewes that had been cell-grazed until one month pre-lambing. Contact with feral cats is believed to have led to the problem.

An outbreak of *Campylobacter fetus* abortion was seen in block-grazed ewes under stress from an associated feed shortage. *Campylobacter* abortion has previously been associated with block-grazing and heavy stocking rates.

Hydatids update

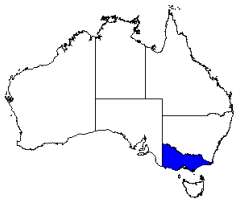
Tasmania was declared provisionally free of hydatid disease in dogs and sheep in February 1996, following disposal of the last known infected sheep flocks. To maintain this status, the DPIWE hydatids program is aimed at:

- detecting and removing any residual infection; and
- minimising the risk of infection entering from the mainland.

Detection relies on intensive abattoir surveillance. Each year in Tasmania about 400 000 sheep and 60 000 cattle are inspected at slaughter. If any cysts are found, the property of origin is thoroughly investigated and the infected flock or herd is quarantined and progressively slaughtered.

Since February 1996, two flocks have been quarantined following the detection of single cysts. Extensive follow-up slaughter and inspection proved negative in each case. One infected herd of cattle has been quarantined. The infection in the herd was traced back to an infected working dog recently imported from the mainland. Compulsory pre-entry treatment of dogs has since been introduced to minimise the risk of re-introduction of this disease to Tasmania.

Victoria



Contributed by:
John Galvin
Agriculture Victoria

Ovine Johne's disease

Under the national ISP for OJD, flocks considered to have the highest risk of exposure to OJD were targeted for testing. The testing of 15 321 sheep in 96 flocks resulted in five new infected flocks being detected. ISP also provided subsidies for 50 Victorian flocks to enter the Australian Sheep Johne's Disease Market Assurance Program.

Initial work in Victoria indicated that gross pathological changes in the gut could readily be seen in a proportion of sheep from OJD-infected flocks at slaughter. On this basis, a pilot monitoring program for OJD was established in three Victorian abattoirs that slaughtered a significant number of older sheep. At two abattoirs, casual staff were employed to undertake inspection duties; at the third, abattoir-employed Quality Assurance staff were encouraged to conduct inspections for OJD. Samples were taken for histopathological examination from any sheep showing gross lesions suggestive of OJD. The pilot trial ran from July to September and provided a number of valuable lessons in establishing and running abattoir monitoring for OJD. Conditions affecting sheep that can look similar to OJD were identified, as were traceback procedures to identify the properties of origin of sheep with suspect lesions. A total of four sheep from three properties with OJD were detected. Traceback to properties of origin would be improved with an effective sheep identification system.

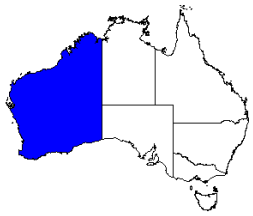
Ovine brucellosis control area

In 1997, the Victorian Mallee was declared a control area for ovine brucellosis (*Brucella ovis*). Testing in the first year of this program concentrated on the area from Ouyen to the South Australian border where a voluntary testing program had been running for a number of years. In 1997, 28 (14.9%) of 188 flocks tested were positive and 155 (6.9%) of 2243 rams tested were positive. In 1998, the testing area was expanded to include areas north and south of that tested in 1997. Retesting of the 1997 area showed 8 (4.3%) of 187 flocks and 16 (0.7%) rams of 2170 were positive. The testing results for the areas north and south of the 1997 area showed 107 (44.8%) of 239 flocks and 699 (24.4%) of 2869 rams were positive. These results indicate that ovine brucellosis can be controlled on an area basis under an industry-driven program that ensures all rams are presented for testing, infected rams are slaughtered, and action is taken to prevent re-introduction of infection to the area. The cost per ram tested in 1998 was $7.00.

Plant toxicities

Toxic plants can cause production losses and mortality in various classes of livestock. During the third quarter of 1998, plant toxicities recorded included: nitrate/nitrite poisoning of sheep on capeweed pastures that contained high nitrate levels; cowpea aphid on legume varieties which, when ingested by sheep, caused photosensitisation; sheep deaths in northern Victoria were attributed to oxalate poisoning that resulted in hypocalcaemia and kidney failure after grazing *Oxalis* spp.; and phalaris staggers caused death in cattle. There was a report of 1080 poisoning in lambs that had been exposed to a baited carrot trail. The carrots had been put out a month before deaths began and had dried out, but after a period of rain the carrots rehydrated, making them attractive to the sheep. Pieces of carrot were found in the rumen of sheep at post mortem examination.

Western Australia



Contributed by:
Richard Norris
Agriculture WA

Laboratory investigations

There were 426 investigations of animal disease requiring laboratory testing during the reporting period. Most of the investigations were for sheep (135 cases) and cattle (119 cases), with smaller numbers of horses (63 cases), poultry (24 cases), pigs (15 cases) and goats (11 cases). There were ten notifiable diseases registered and two cases where an exotic disease was suspected. Six zoonotic diseases were diagnosed, four of them reported by a private veterinary laboratory.

Notifiable diseases

Several new diagnoses of chalkbrood of bees were made in the Perth metropolitan area. Fowl cholera was seen in a large metropolitan commercial poultry hatchery. Mucosal disease was seen in young calves near Albany.

Hydatids in the Kimberley?

Despite evidence published in an academic study, Agency staff at Kununurra were unable to confirm that the parasite causing hydatid disease (*Echinococcus granulosus*) has established a sylvatic cycle in the Kimberley. Abattoir inspection of cattle from several stations showed that hydatid cysts were only present in cattle originally sourced from Queensland.

Sheep pox scare

Severe disease affected a mob of 3000 sheep at Esperance in October. Dozens of sheep had extensive skin lesions above the coronet of the hooves, causing sloughing of the feet in some cases. Laboratory examination showed that the lesions were caused by scabby mouth virus with secondary bacterial infections.

Confirmed zoonotic diseases

Chlamydiosis (psittacosis) was seen in birds and cats in the metropolitan area. Mycobacteriosis occurred in a dog in the north-west and in a metropolitan cat. Leptospirosis was recorded in cattle in a Harvey dairy. The owners were advised of the risks associated with these diseases.

Rabies suspect

Prompt reporting and investigation was required when a stray farm dog died suddenly after showing clinical signs of rabies (change of temperament, foaming at the mouth, convulsions) on a farm near Narrogin in October. A local farmer said the dog, a stranger to him, wandered onto his property and was remarkably friendly (a classical sign of rabies in foxes and dogs) but later became ill and died after rushing into a nearby paddock. Fearing rabies, he immediately telephoned the exotic disease hotline and reported the incident. Subsequent laboratory testing at South Perth and AAHL excluded rabies. The dog had probably picked up a poison bait earlier in the day.

Bat lyssavirus

Additional micro-bat specimens from near Perth were examined for the presence of Australian bat lyssavirus with negative results. To date, there is no evidence of the virus in WA.

National TSE Surveillance Program

NTSESP, originally launched in January 1998, was strengthened with the announcement of financial incentives for producers and rural veterinarians by AAHC. To the end of October 1998, the laboratory had recorded TSE exclusions in 25 cattle and 23 sheep. The targets for WA are 24 cattle and 112 sheep.

New diseases

A congenital leucodystrophy was seen in Angus calves on a property in the Moora area. Calves were born weak and ataxic and had severe lesions in the white matter of the brain. The disease has not been described in cattle and is probably inherited. Heavy mortalities in crocodiles at a Broome farm were shown to be associated with blood flukes (*Gripobilharzia amoena*) and coccidiosis (*Goussia* spp.).

Quarterly Disease Statistics

Control activities

Tuberculosis

Australia was declared a Free Area for bovine tuberculosis (TB) on 31 December 1997. The National Granuloma Submission Program is the major surveillance tool for TB. Table 1 summarises results from the program. There were two cases of TB detected in the current quarter in the 699 granulomas that were submitted.

Table 1: Results of the National Granuloma Submission Program

	Granulomas submitted	TB +ve
Jul – Sep 97	1466	4
Oct – Dec 97	855	0
Jan – Mar 98	550	0
Apr – Jun 98	614	0
Jul – Sep 98	699	2
NSW	117	0
NT	66	2
QLD	325	0
SA	15	0
TAS	26	0
VIC	10	0
WA	140	0

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 218 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 2.

Table 2: Surveillance for bovine brucellosis

	Abortion Investigations		Test for other reasons	
	Tests	+ve	Tests	+ve
Apr – Jun 97	196	0	3956	0
Jul – Sep 97	169	0	2847	0
Oct – Dec 97	79	0	1285	0
Jan – Mar 98	86	0	524	0
Apr – Jun 98	218	0	2459	0
NSW	20	0	125	0
NT	130	0	711	0
QLD	36	0	667	0
SA	25	0	1	0
TAS	7	0	29	0
VIC	0	0	153	0
WA	0	0	773	0

Enzootic bovine leucosis

Enzotic 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 3 shows the number of dairy herds tested free of EBL at the end of the quarter.

Table 3: Dairy herds tested free of EBL at 30 September 1998

	NSW	NT	QLD	SA	TAS	VIC	WA	AUST
Free	1497	0	1735	731	719	6481	455	11 618
Herds	1791	0	2026	749	810	8453	455	14 284

Ovine brucellosis

Accreditation programs for ovine brucellosis freedom are operating in most States. Table 4 shows the number of accredited flocks at the end of the quarter.

Table 4: Ovine brucellosis accredited-free flocks at 30 September 1998

NSW	NT	QLD	SA	TAS	VIC	WA	AUST
1280	0	71	544	148	762	86	2891

Johne's disease

JD occurs primarily in dairy cattle and sheep in Australia and to a lesser extent in beef cattle, and dairy goats. It has also been diagnosed in a small number of alpacas in recent years. JD occurs in NSW, Victoria, Tasmania and South Australia. Surveillance programs have not identified endemic JD in Queensland, WA and NT, and active measures are taken to stamp-out any incursions. Table 5 shows the number of herds and flocks known or suspected to be infected. A National Ovine Johne's Disease Control and Evaluation Program for the next six years has been endorsed.

Market assurance programs (MAPs) are in operation for cattle, sheep and alpaca. There was a rapid uptake of the program in the sheep industry following promotion and subsidies paid through the national Interim Surveillance and Research Program from April until September 1998.

Many high-profile studs were tested during this period. Increased uptake of MAP among sheep studs and large commercial producers increases confidence about the understanding of the extent of OJD as well as identifying sources of low risk replacement sheep.

Table 5: Herds/flocks with JD at 30 September

	Cattle	Sheep	Goats	Alpacas	Total
NSW	163	308	12	2	485
NT	0	0	0	0	0
QLD	0	0	0	0	0
SA	20	17	0	0	37
TAS	37	14	9	0	60
VIC	1748	19	8	12	1787
WA	0	0	0	0	0
AUS	1968	358	29	14	2369

At the end of September, there were 516 assessed cattle herds; one third of which were dairy herds and two thirds beef herds; 95% (487) are in NSW with 14 herds in Victoria, 14 in South Australia and one in Tasmania.

There were 361 sheep flocks assessed as MN1: NSW 160, SA 126, Victoria 56, Tasmania 19.

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 on a fax-back service on 1902 940 579.

Laboratory testing

The results of serological testing for a range of viral diseases from routine laboratory submissions for the quarter are shown in Table 6.

Table 6: Results of 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
Apr – Jun 97	1011	285	7797	182	944	171	3231	28	348	0	279	1
Jul – Sep 97	2229	356	7442	322	1464	180	5228	2	710	1	462	26
Oct – Dec 97	1683	408	8005	224	2072	611	907	16	657	0	708	9
Jan – Mar 98	2951	568	9196	380	2692	316	1142	6	449	0	230	1
Apr – Jun 98	1988	572	11438	138	1622	261	525	4	594	0	576	4
NSW	35	7	391	10	111	1	248	0	244	0	280	1
NT	995	360	4441	124	928	174	159	4	10	0	0	0
QLD	376	178	4812	121	248	73	113	0	115	0	25	1
SA	157	0	1446	0	2	0	0	0	3	0	0	0
TAS	60	0	64	0	60	0	4	0	0	0	0	0
VIC	141	0	174	0	153	0	0	0	131	0	208	2
WA	224	27	110	10	120	13	1	0	91	0	63	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 *Communicable Diseases Intelligence* (CDI) is accessible at http://www.health.gov.au/pubhlth/cdi/cdihtml.htm (new address). Table 7 summarises some of the information for zoonoses.

Contact: Communicable Diseases Intelligence, Australian Department of Health and Aged Care

Table 7: Notifications of zoonotic diseases in humans

Disease	Q3-97	Q4-97	Q1-98	Q2-98	Q3-98	Current quarter							
	Australia				AUST	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Brucellosis	13	13	13	50	56	0	5	0	46	0	0	4	1
Hydatidosis	22	19	9	71	74	0	2	0	17	4	1	44	6
Leptospirosis	20	33	40	175	178	0	37	4	103	2	0	24	8
Listeriosis	14	9	18	63	41	0	25	0	6	5	0	4	1
Ornithosis	5	7	5	43	38	0	0	0	0	2	2	30	4
Q fever	136	124	114	685	680	0	273	0	335	25	0	27	20

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 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 NSSS. Table 8 summarises *Salmonella* isolations from animals, notified to NSSS for the quarter

Contact: National Salmonella Surveillance Scheme, Microbiological Diagnostic Unit, University of Melbourne

Table 8: Salmonella notifications, 1 July to 30 September, 1998

Serovars	avian	bovine	canine	equine	feline	ovine	porcine	other	Total
S. bovismorbificans	0	11	0	0	0	0	2	1	14
S. dublin	0	51	0	0	0	0	0	0	51
S. infantis	2	2	0	0	1	0	0	2	7
S. typhimurium	7	136	4	0	2	1	4	1	155
Other	22	19	5	2	1	0	29	22	100
Total	31	219	9	2	4	1	35	26	327

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 9 summaries NAQS activity over the past five quarters.

Table 7: Summary of recent NAQS activity

	Jul – Sep 97		Oct – Dec 97		Jan – Mar 98		Apr – Jun 98		Jul – Sep 98		Notes
	Tests	+ve	Tests	+ve	Tests	+ve	Tests	+ve	Tests	+ve	
Avian influenza	0	0	0	0	0	0	157	0	6	0	
Aujeszky's disease	14	0	0	0	0	0	58	0	0	0	
Classical swine fever	64	0	50	0	27	0	70	0	0	0	
Canine ehrlichiosis	42	0	94	0	34	0	69	0	0	0	
Infectious bursal disease	0	0	0	0	8	0	147	2	0	0	
Japanese encephalitis	128	2	211	0	556	46	583	31	5	0	a
Newcastle disease	0	0	0	0	12	0	167	0	6	0	
PRRS	14	0	0	0	0	0	58	0	0	0	
Screw-worm fly	1	0	2	0	1	0	0	0	0	0	b
Swine influenza	14	0	0	0	0	0	58	0	0	0	
Surra	103	0	250	0	234	0	98	0	5	0	
Transmissible gastroenteritis	14	0	0	0	0	0	58	0	0	0	
Trichinellosis	0	0	0	0	7	0	22	0	0	0	

Notes

a In previous years, animals at sentinel sites on islands in the Torres Strait, but not the Australian mainland, have shown seroconversions during the latter part of the wet season (January–April). In 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 northern tip of Cape York Peninsula.

b These figures count ad hoc examinations of animals symptomatic for screw-worm fly. There are also three screw-worm fly traps at each of 24 sites. These traps are inspected monthly and no screw-worm flies have been found.

Contact: David Banks, AQIS

National Residue Survey

Of 3121 samples tested during the quarter for agricultural and veterinary chemicals, only four (0.13%) had residues above the maximum residue limit (MRL). Residues above MRL were for oxytetracycline, chlortetracycline and neomycin in three pig samples and dieldrin in a sheep sample. Table 8 summarises the results for the quarter.

NOTE: There was an inadvertent transposition of data in the April to June 1998 report *(AHSQ*, Vol. 3 No. 2). The results for 'metals' in poultry and pigs were transposed. There were no detections of metals above the MPC in the five poultry samples.

Further 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:

- About the National Residue Survey;
- NRS 1997 Results;
- NRS Recent Publications and Papers;
- Extension Materials for Residues in Meat;
- Frequently Asked Questions;
- Information for Laboratories; and
- Associated Web Sites.

Recent publications by NRS include

- NRS Annual Report 1997–98; and
- report on the 1997 NRS results.

Copies are available on request from:
Dr Rusty Branford, NRS
National Office of Food Safety
GPO Box 858, Canberra, ACT 2601
Phone 02 6272 5096
Fax 02 6272 4023
E-mail rusty.branford@affa.gov.au

Table 10: National Residue Survey results, 1 July to 30 September 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		AUS	
Anthelmintics																
Cattle	0	70	0	4	0	96	0	9	0	6	0	19	0	11	0	215
Pigs	0	17	0	0	0	17	0	7	0	0	0	15	0	13	0	69
Sheep	0	60	0	0	0	13	0	26	0	2	0	39	0	29	0	169
Other	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	0	147	0	4	0	126	0	42	0	9	0	73	0	53	0	454
Antimicrobials																
Cattle	0	106	0	10	0	153	0	18	0	14	0	45	0	14	0	360
Pigs	2	85	0	0	1	65	0	22	0	0	0	77	0	48	3	297
Poultry	0	42	0	42	0	31	0	0	0	0	0	0	0	0	0	115
Sheep	0	44	0	0	0	4	0	11	0	1	0	26	0	25	0	111
Other	0	11	0	2	0	21	0	4	0	1	0	6	0	2	0	47
Total	2	288	0	54	1	274	0	55	0	16	0	154	0	89	3	930
Growth promotants																
Cattle	0	151	0	11	0	202	0	32	0	11	0	51	0	18	0	476
Pigs	0	4	0	0	0	6	0	2	0	1	0	1	0	0	0	14
Poultry	0	4	0	2	0	4	0	0	0	0	0	0	0	0	0	10
Sheep	0	44	0	0	0	10	0	15	0	3	0	37	0	19	0	128
Other	0	2	0	3	0	13	0	5	0	0	0	10	0	5	0	38
Total	0	205	0	16	0	235	0	54	0	15	0	99	0	42	0	666
Insecticides																
Cattle	0	138	0	11	0	188	0	20	0	6	0	63	0	19	0	445
Feral	0	0	0	1	0	16	0	0	0	0	0	0	0	0	0	17
Pigs	0	23	0	0	0	16	0	3	0	0	0	13	0	12	0	67
Poultry	0	13	0	12	0	12	0	0	0	0	0	0	0	0	0	37
Sheep	0	126	0	0	0	21	0	38	0	7	1	102	0	67	1	361
Other	0	10	0	3	0	17	0	16	0	1	0	3	0	7	0	57
Total	0	310	0	27	0	270	0	77	0	14	1	181	0	105	1	984
Metals																
Cattle	1	24	0	1	0	31	0	6	0	3	0	7	0	3	1	75
Pigs	0	10	0	0	0	6	0	3	0	1	0	9	0	5	0	34
Poultry	0	7	0	5	0	10	0	0	0	0	0	0	0	0	0	22
Sheep	0	17	0	0	1	5	0	6	0	3	1	15	1	14	3	60
Other	0	0	1	4	0	1	0	0	0	0	0	1	0	0	1	6
Total	1	58	1	10	1	53	0	15	0	7	1	32	1	22	5	197
Miscellaneous																
Cattle	0	24	0	1	0	29	0	4	0	3	0	7	0	3	0	71
Other	0	3	0	1	0	9	0	0	0	0	0	3	0	0	0	16
Total	0	27	0	2	0	38	0	4	0	3	0	10	0	3	0	87

Rabbit calicivirus

In arid and semi-arid areas of Australia with an annual rainfall of less than 300 mm, the monitoring program for rabbit calicivirus disease (RCD) found that 82% of intensive and broadscale monitoring sites recorded rabbit population declines of greater than 65%. Only 46% of sites in wetter areas recorded similar declines.

The seventh and final report of the RCD Monitoring and Surveillance Program will be released in late December 1998. The results from the two years of the program are being prepared as four RCD Program Reports — one each on the virus's release and spread, agricultural production, biodiversity, and integrated rabbit control. These reports are due to be completed by June 1999.

For further information contact Dr Helen Neave, Project Officer, RCD Monitoring and Surveillance Program, phone (02) 6272 5007

Suspect Exotic Disease Investigations

There were 20 exotic disease investigations reported during the quarter, as shown in Table 11.

Table 11: Suspect exotic disease investigations

Disease	Species	State	Reponse see key	Finding
Newcastle disease	avian	NSW	6	Confirmed
Avian influenza	avian	NSW	3	Negative
Brucella mellitensis	human	NSW	3	Confirmed; contracted overseas
Bluetongue	ovine	NSW	3	Photosensitisation
Australian bat lyssavirus	fauna	QLD	2	Lyssavirus excluded
Newcastle disease	avian	QLD	1	Botulism
Avian influenza	avian	QLD	1	Exhaustion
Duck virus enteritis	avian	QLD	2	Herpesvirus
Australian bat lyssavirus	fauna	QLD	2	Lyssavirus excluded
Vesicular stomatitis	bovine	QLD	2	Caustic vine poisoning
Asian bees	apian	QLD	1	Anthophoridae
Asian bees	apian	QLD	1	*Apis mellifera*
Vesicular stomatitis	bovine	QLD	2	Hepatogenous photosensitisation
Newcastle disease	avian	SA	3	Negative
Vesicular stomatitis	bovine	TAS	2	Negative
Anthrax	bovine	TAS	2	Negative
Avian influenza	avian	TAS	3	Negative
Bovine spongiform encephalopathy	bovine	WA	2	Negative
Brucella abortus	bovine	WA	2	Negative for brucellosis
Newcastle disease	avian	WA	2	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

NAHIS contributors

Name	Organisation	Phone	Fax	e-mail
Rod **Andrewartha**	Tas. State Coordinator	03 6233 6836	03 6228 5123	rod.andrewartha@dpiwe.tas.gov.au
Chris **Baldock**	NAHIS National Coordinator	07 3255 1712	07 3844 5501	ausvet@eis.net.au
David **Banks**	Northern Australia Quarantine Strategy	02 6272 5444	02 6272 3399	David.Banks@aqis.gov.au
Chris **Bunn**	Emergency Diseases Strategy Section AFFA	02 6272 5540	02 6272 3372	chris.bunn@affa.gov.au
Paul **Crew**	CEO AAHC	02 6232 5522	02 6232 5511	aahc@ozemail.com.au
Kim **Critchley**	SA State Coordinator	08 8207 7908	08 8207 7852	critchley.kim@pi.sa.gov.au
John **Galvin**	Vic. State Coordinator	03 5430 4517	03 5430 4505	john.galvin@nre.vic.gov.au
Graeme **Garner**	AFFA NAHIS Coordinator	02 6272 5369	02 6272 4533	graeme.garner@affa.gov.au
Ana **Herceg**	Communicable Diseases Intelligence	02 6289 1555	02 6289 7791	http://www.health.gov.au
David **Kennedy**	OJD Coordinator	02 6365 6016	02 6365 6088	ausvetdk@netwit.net.au
Diane **Lightfoot**	National Salmonella Surveillance Scheme	03 9344 5701	03 9344 7833	d.lightfoot@microbiology.unimelb.edu.au
Bill **Matthews**	National Granuloma Submission Program, AQIS	02 6272 5042	02 6272 3307	William.Matthews@aqis.gov.au
Melanie **O'Flynn**	National Residue Survey, AFFA	02 6272 4549	02 6272 4023	melanie.oflynn@affa.gov.au
Richard **Norris**	WA State Coordinator	08 9368 3637	08 9367 6248	rnorris@sp.agric.wa.gov.au
Diana **Pinch**	NT Coordinator	08 8999 2354	08 8999 2024	diana.pinch@dpif.nt.gov.au
Gavin **Ramsay**	Qld State Coordinator	07 3227 7668	07 3239 3510	RamsayG@dpi.qld.gov.au
Evan **Sergeant**	NSW State Coordinator	02 6391 3687	02 6361 9976	Evan.Sergeant@agric.nsw.gov.au
Peter **Thornber**	Office of the Aust. CVO, AFFA	02 6271 6343	02 6272 5697	Peter.Thornber@affa.gov.au

This report was prepared for the Australian Animal Health Council Limited by the Scientific Assessment Branch of the National Offices of Animal and Plant Health and Food Safety. 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.