ANIMAL HEALTH SURVEILLANCE QUARTERLY

Newsletter of Australia's National Animal Health Information System

Volume 4 **Issue 3**

Quarterly Report for 1 July to 30 September 1999

Preface

The National Livestock Identification Scheme (NLIS) will be used as the animal identification scheme for properties registered to supply the European Union. An article on recent developments with NLIS leads this newsletter. There are two articles relating to overseas matters — a meeting of Australasian and Oceania Commonwealth Chief Veterinary Officers, and Australian involvement in a project in India aimed at developing improved diagnostic tests for sheep and goat pox. Aquatic animal health is an area of growing importance, both nationally and internationally. Regular updates on aquatic animal health will be included in this newsletter.

Other topics include highlights of disease surveillance activities, items of interest from States and Territories, and summaries of disease surveillance and monitoring programs reported to Australia's National Animal Health Information System (NAHIS). 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.

Gardner Murray
Australian Chief Veterinary Officer

National Livestock Identification Scheme

Background

The National Livestock Identification Scheme (NLIS) is a cattle industry initiative developed in close consultation with the Commonwealth Government and State/Territory governments. NLIS is a voluntary scheme that provides an enhanced system for animal identification and traceback, as well as a way for producers to obtain better feedback on carcase quality and other attributes at the time of slaughter. The objectives of NLIS are to:

- enhance the traceability of cattle from processing back to property of birth and, conversely, from birth to slaughter; and
- facilitate the link to industry programs such as individual carcase feedback (e.g. to the Meat Standards Australia grading program), genetic improvement programs, on-farm quality management programs and animal health programs.

NLIS centres on the application of a 'whole of life' identification device to cattle at their property of birth. These devices are required to meet the specifications of the NLIS standards that include criteria for field retention and machine readability. The devices are removed from the animal at the point of slaughter. The permanent 'whole of life' devices complement existing transaction tagging arrangements used to identify consignors (using wrap-around and ratchet tail-tags or large ear-tags). The permanent device will typically identify the breeder, while the transaction tag will identify the consignor.

Contents

The voluntary nature of NLIS means that it will be implemented progressively across Australia with each State/Territory to make its own decision in consultation with industry. State and Territory governments have agreed to enact underpinning legislation to support the integrity of the system. Implementation of NLIS commenced in Victoria in January 1999 when the Victorian Government provided one million identification devices free to Victorian beef producers and dairy farmers.

Industry is driving the development and implementation of NLIS through the SAFEMEAT partnership. SAFEMEAT is a national committee of industry and government leaders that is responsible for strategic policy advice on meat safety and hygiene issues. NLIS has the full support of the Commonwealth Government and State/Territory governments through the Agriculture and Resource Management Council of Australia and New Zealand.

Recent developments

Industry has recently agreed to NLIS being used as the animal identification and traceback scheme on properties registered to supply the European Union (EU). These properties will be required to use NLIS transaction tags from 1 December 1999 and NLIS permanent ID devices from 1 April 2000.

Radio frequency identification devices

SAFEMEAT has ratified radio frequency identification devices (RFIDs) as the standard form of permanent identification for cattle in Australia. RFIDs will use electronic transponders embedded in ear-tags or rumen boluses and be permanently coded with a unique number, enabling traceback. This transponder will be linked to the property and animal number in a computer database. A hand-held or fixed reader can be used to read the devices, or they can be read visually.

RFIDs offer significant advantages through automation of collection and processing of information, which reduces errors and saves time and workload. A major use of RFID technology is for electronic data transfer. Meat and Livestock Australia (MLA) is establishing a database to manage information flow and maximise the industry value in the delivery of carcase feedback.

ISO standards for livestock RFID define the structure of the number code in transponders, the operating frequency, and the interaction between readers and transponders. ISO-compliant transponders operate at 134.2kHz and are categorised as either Half Duplex (HDX) or Full Duplex-B (FDX-B), both of which have been endorsed as a national standard for cattle.

Although participation in NLIS is voluntary, producers wishing to sell cattle to EU-licensed abattoirs must use NLIS-endorsed RFID ear-tags.

Interim EU database

An interim EU database has been constructed to fulfil the requirements of the closed supply arrangements for the EU market. The database will be ready to load 'live' data before the start of December. The database is managed by MLA, and will be accessed by the internet. Administrative and helpline services will be available to government staff, producers, abattoirs and tag manufacturers.

Development of the fully functional NLIS database has been delayed by the need to construct the EU database. However, the EU database is sufficiently powerful to carry the load over the next year.

Data transmission standards

There is currently no computer language standard for the structure and transmission of feedback data from the processing industry to cattle producers. This means that there are several different forms of electronic feedback data that are not compatible. The NLIS Technical Working Group has formed a committee to develop a standard.

Contributed by John Fleming, National Office for Food Safety

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 or other emergency disease situation. Anyone suspecting an exotic disease outbreak should use this number to get immediate advice and assistance.

Contact: Chris Bunn, Animal Health Science and Emergency Management Branch, National Offices of Animal and Plant Health and Food Safety, AFFA.

Newcastle disease

As reported in the last issue of *Animal Health Surveillance Quarterly*, an outbreak of Newcastle disease was confirmed on 19 August on a small layer farm at Schofields in Sydney's outer Western Suburbs. This was the third outbreak of virulent Newcastle disease in New South Wales (NSW) in less than 12 months, all due to a virulent mutation of endemic Newcastle disease virus. The 8000 caged, laying hens on the farm were rapidly and humanely destroyed and disposed of by burial at the licensed Eastern Creek tip. Movement controls were imposed and surveillance undertaken on commercial poultry farms within a 3-km radius of the infected farm. All surveillance has now been completed, with no further signs of Newcastle disease detected.

Surveillance in the Mangrove Mountain Control Area following eradication of the outbreak there earlier in the year is scheduled to be completed by the end of November, with all results negative to date. Both the Mangrove Mountain and the Schofields Restricted and Control Areas should be revoked by the end of the year.

Contributed by Evan Sergeant, NSW Agriculture

Asian bee incursion

In September, a small number of live Asian bees (*Apis cerana)* were identified on a cargo vessel that had just docked in Brisbane. It is thought that a swarm of *Apis cerana* boarded the vessel in Papua New Guinea and were able to survive the journey to Brisbane. Five bees were caught and examined for the presence of mites, none of which was found.

A small number of bees left the ship but it is not known whether they perished or were able to survive and establish in the wharf area. Given the potential threat to the Australian bee industry an emergency response was initiated. A circular quarantine zone with a 2-km radius was established around the wharf, and activities concentrated on trying to find live *Apis cerana* bees within this area to ascertain whether the bees survived.

The response has used a variety of methods — including traps, sweep netting, bee-lining and responding to calls from the public — to assess and monitor the local bee population in the quarantine zone. More than 5000 samples have been collected and assessed, and *Apis cerana* has not been found. Public response has been very good, and valuable information has been received from calls made to the QDPI Call Centre.

The response was scaled down into a longer-term surveillance project to monitor the local bee population in the wharf area. Continuing negative reports for *Apis cerana* will demonstrate that these bees did not survive and show that Queensland remains free of them. Should a positive finding be made, the response will be intensified until the *Apis cerana* hive is found and destroyed.

Contributed by Janet Berry, QDPI

Commonwealth Chief Veterinary Officers meeting

Australasian and Oceania Commonwealth Chief Veterinary Officers (CCVOs) met in Vanuatu in October. Participants came from Australia, Fiji, Malaysia, New Zealand, Papua New Guinea, Samoa, Solomon Islands and Vanuatu, with an apology from Tonga. Also present were the President of the Commonwealth Veterinary Association and an observer from the South Pacific Commission (SPC).

This regional meeting reviewed activities and progress since the last CCVO meeting at Bangalore, India, in March 1998. The focus of such regional meetings will remain the dissemination of information, technical exchange, and collaboration in education and research. Information sharing and communication were considered to be the most important issues for animal (including aquatic animal) health services in the region. Participants reconfirmed their willingness to formalise their working relationship with the Commonwealth Veterinary Association through Associate Membership.

The importance of the Office International des Epizooties (OIE, the world organisation for animal health) was acknowledged. Apart from Australia and New Zealand, Vanuatu is the only Pacific Commonwealth nation that is an OIE Member. New Caledonia, a non-Commonwealth country, is also a member. Other nations of Oceania were urged to reconsider becoming OIE Member countries. However, budget difficulties were acknowledged as a current restraint for many countries to do so.

The meeting agreed that the veterinary profession needed to increase its involvment in aquatic animal health and production. Aquaculture is of growing importance in the region. CCVOs are responsible for import risk analyses and export certification, but lack experience in fish and aquatic animals.

Animal welfare was also an important matter and that the need for public education and awareness was identified. SPC is well placed to coordinate animal welfare initiatives proposed by various international agencies, including the possible establishment of a regional animal welfare trust.

Recent animal disease surveys in a number of Pacific Island countries have identified three diseases of increasing public health significance — toxoplasmosis, trichinellosis and leptospirosis. These have been associated with an increase in reports of clinical disease. As well, *Angiostrongylus cantonensis* has been associated with a significant number of human cases of meningitis.

Animal health capacity remains a concern in Oceania, with only 11 of 22 regional countries having any veterinary capacity.

Contributed by Peter Thornber, National Office of Animal and Plant Health

Australia–India sheep and goat pox project

Sheep and goat pox (SGP) are highly contagious viral diseases of sheep and goats characterised by skin lesions, fever, and ocular and nasal discharges. Pox lesions appear on the skin and on the respiratory and gastrointestinal mucosa. Mortality can be high. SGP are considered to be the most serious poxviral diseases of production animals. This, together with their serious impact on trade, is reflected in their inclusion in the OIE 'List A diseases'.

To maintain its SGP-free status, Australia needs diagnostic tests to detect any incursion, and to assist in rapidly re-establishing disease-free status should an outbreak occur. Australia does not have adequate diagnostic and sero-epidemiological tests for SGP, and the development of such tests has been identified as a priority.

As part of developing and validating suitable tests, it is important to work in an area where SGP outbreaks regularly occur. The BAIF Development Research Foundation in Pune, India was interested in developing suitable diagnostic tests and improved vaccines for the control of SGP. SGP occur in India in all regions where sheep (56.5 million) and goats (120.6 million) are reared.

After a feasibility study in 1995, the Australian Centre for International Agricultural Research (ACIAR) provided funding for a collaborative project to undertake field studies of SGP in the state of Maharashtra, India, and for laboratory studies to develop effective diagnostic tests for the disease. The participants in the project were CSIRO Australian Animal Health Laboratory (AAHL), BAIF Development Research Foundation, Agriculture Western Australia and the then Bureau of Resource Sciences (the Branch involved is now part of the National Office of Animal and Plant Health).

A survey of 1116 sheep and goat owners, covering all the flock management systems in Maharashtra, collected information on flock sizes and structure, sources of income and costs, the occurrence of outbreaks of SGP and other diseases, and on the effect of disease on the productivity of flocks. Eighty owners (7.2%) reported that they had experienced SGP in the past six years. The results showed that, although SGP ranked low compared to other infectious diseases such as foot-and-mouth disease, rinderpest, peste des petite ruminants and enterotoxaemia, when SGP did occur, morbidity and mortality rates were high, averaging 63.5% and 49.5% respectively. In recent years, SGP had mainly been a problem for goat owners, with local migratory goat herds being at greatest risk.

Models were developed to evaluate the economic effect of SGP on each herd or flock type in Maharashtra. These suggested it would take about six years for a flock or herd to recover from an outbreak, with average annual losses in income of

30–43% depending on flock type and the owner's actions. State-wide, it was estimated that about 5000 flocks and herds are affected by SGP annually in Maharashtra, costing an estimated $4.7 million.

Laboratory-based studies were undertaken in Australia (by AAHL) and at Pune, India (BAIF Laboratories) to develop enzyme-linked immuno-sorbent assay (ELISA) and polymerase chain reaction (PCR) tests to detect antibodies and virus following infection with SGP.

PCR amplification was found to be a fast and sensitive method for detecting of SGP in clinical and tissue culture materials. The primer pairs used as the basis of the test were specific for SGP and did not react with parapox (orf virus) or orthopox (vaccinia virus) DNA. PCR amplification was also used to compare nucleotide sequencing of selected viral genes to determine the nature and extent of genetic variation present in Indian vaccine and field strains of SGP viruses. Comparison with genes from a Nigerian isolate of sheep pox revealed from two to five nucleotide differences. The limited data suggest that there is a level of heterogeneity in the genomes of Indian SGP viruses. The extent of this heterogeneity and its effect on vaccine efficacy require future studies using a larger number of viral isolates.

An SGP antibody detection ELISA, based on a recombinant *E. coli*-expressed sheep pox antigen (H3L) was developed. Limited evaluation suggests the test might be of value for detecting antibodies in flocks that have recovered from SGP. Establishment of specificity and sensitivity values for the test format was hampered by the lack of well-characterised sera from animals previously infected with SGP viruses.

A number of outbreaks of SGP were investigated to collect tissue samples for viral isolation, serum samples for antibody assays, and epidemiological data on risk factors and disease effects. Isolation of virus in embryonated eggs and cell cultures was also undertaken. This collection of samples from field outbreaks will prove valuable for future studies on SGP viruses that might be undertaken in India.

The full report of the 18-month collaborative project (Development and standardisation of diagnostic tests and vaccines for the control of sheep and goat pox diseases in India and Australia) is available at www.ah.csiro.au/newsline/capripoxfinalreport.pdf on the internet.

Contributed by Graeme Garner, National Office of Animal and Plant Health.

National Residue Survey

One source of data for the National Animal Health Information System is the National Residue Survey (NRS) program, conducted by the Residues and Standards Branch of the National Office of Food Safety in Agriculture, Fisheries and Forestry – Australia. The primary function of NRS is to monitor chemical residues and environmental contaminants in the products of participating industries.

NRS was established in the early 1960s as the Commonwealth response to growing concerns about pesticide residues in major meat exporting markets. Since then, the range of commodities covered by NRS monitoring surveys has expanded and 16 animal, 14 plant and selected fisheries and aquaculture products were monitored in 1998–99.

Residue monitoring is an important part of an overall strategy to minimise unwanted residues and environmental contaminants in food. It serves to identify potential problems and indicates where follow-up action is required. Surveys for chemical residues are also important as a measure of overall product quality, since most countries require that imported food commodities are certified as complying with agreed chemical residue limits.

NRS results are available soon after tests are conducted and are reported regularly to industries and relevant government authorities. State and Territory government authorities are immediately notified when Australian residue standards are contravened, so that they can investigate and take action to prevent any recurrence.

Survey types

NRS is, or could be, involved in three kinds of surveys or associated programs:

- *Monitoring surveys* provide a statistically valid profile of the occurrence of a residue (or residues) in a commodity, by a randomised sampling process.
- *Surveillance surveys* obtain information about a known or potential residue problem, by a targeted (non-random) sampling process.

- *Compliance programs* are regulatory control measures to prevent the normal marketing, from specific sources, of product that is known to be contaminated.

Cost recovery

NRS operates on the basis of full cost recovery. The basic policy underlying the NRS program is that, within an accounting period, expenses must be equal to revenue received. It is not a function of the NRS reserve to generate a profit or sustain a loss, nor to subsidise the activities of a particular industry or the Government; nor can industry programs be subsidised from appropriations.

NRS funds are not used to cross-subsidise between participating industries, and each industry program is operated as a separate cost centre (see Annual Report for details).

Further information

The NRS publishes information on the internet at www.brs.gov.au/residues/residues.html concerning:

- About the NRS
- Annual Report 1998–99 (Summary)
- Annual Report 1998–99 (Full text, pdf)
- Results Report 1998 (Summary)
- Results Report 1998 (Full text, pdf)
- Monitoring of chemical residues in farmed animals, game, poultry and eggs, July 1999 – June 2000
- Recent Publications and Papers
- Frequently Asked Questions
- Information for Laboratories
- Associated websites

For further information contact:

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Aquatic animal health

AQUAPLAN released

AQUAPLAN is Australia's National Strategic Plan for Aquatic Animal Health for 1998–2003. The plan has been endorsed by Australia's Ministerial Council on Forestry, Fisheries, and Aquaculture as well as fisheries and aquaculture peak bodies in Australia, including the recreational fishing sector. Australia is the only country to have a joint government–industry strategy for aquatic animal health.

AQUAPLAN is a broad, comprehensive strategy that outlines objectives and projects to develop a national approach to emergency preparedness and response, and to the overall management of aquatic animal health in Australia. It has been jointly developed by governments and industry in a manner consistent with existing arrangements in the terrestrial animal sector and, wherever possible, links into existing State/Territory government and industry health management arrangements.

AQUAPLAN comprises eight key programs under which governments and private sectors have identified priority projects to achieve the objectives. These are:

1 International linkages
2 Quarantine
3 Surveillance, monitoring and reporting
4 Preparedness and response
5 Awareness
6 Research and development
7 Legislation, policies and jurisdiction
8 Resources and funding.

The Ministerially appointed Fish Health Management Committee (FHMC) oversees the development and implementation of AQUAPLAN. However, given the statutory nature of international quarantine (Program 2), the Australian Quarantine and Inspection Service has primary carriage for this program.

FHMC is chaired by Dr Gardner Murray, the Managing Director of the National Offices of Animal and Plant Health and Food Safety. FHMC membership comprises representatives from the Commonwealth (Fisheries and Aquaculture Branch of AFFA) and State/Territory governments (SCARM and SCFA), CSIRO Animal Health, the Australian Seafood Industry Council, recreational fisheries, and representatives from the peak aquaculture industry bodies of Australia (Australian Aquaculture Forum).

AQUAPLAN will be adjusted as necessary as progress is reviewed. Updates and progress reports are being provided to stakeholders through FHMC.

A free copy of AQUAPLAN can be obtained from the National Office of Animal and Plant Health or from www.affa.gov.au/ocvo/fhu.html on the internet.

OIE disease reporting

The nature of aquatic animal diseases and the volume of the aquatic animal trade are such that no aquatic animal diseases are currently categorised by OIE as 'List A diseases'. The OIE International Aquatic Animal Health Code (available on the internet at www.oie.int/norms/FCode/A_summry.htm), uses the term 'diseases notifiable to the OIE' instead of 'List B diseases'. Australia is free of most of the aquatic animal diseases notifiable to OIE.

With the exception of epizootic haematopoietic necrosis (EHN), the notifiable diseases of finfish remain exotic to Australia. EHN occurs locally in the Australian Capital Territory, New South Wales, Victoria and South Australia, but there have been no reports of disease since 1996. EHN has never been reported in the other States and the Northern Territory.

Of the notifiable diseases of molluscs, haplosporidiosis, bonamiosis due to *Bonamia ostreae*, marteiliosis due to *Marteilia refringens*, mikrocytosis due to *Mikrocytos mackini* and perkinsosis due to *Perkinsus marinus* remain exotic to Australia. Other *Bonamia* spp., *Marteilia sydneyi*, *Mikrocytos roughleyi* and *Perkinsus olseni* are locally present in some States. In May this year, OIE's International Committee decided to make three crustacean diseases notifiable — none of them has ever been reported from Australia.

OIE has a second list of diseases called 'other significant diseases'. Some of these diseases occur in parts of Australia. Viral encephalopathy and retinopathy (VER) was reported in April and May 1999 in Queensland, with the diagnosis confirmed by histology. The fungal disease epizootic ulcerative syndrome (EUS) was reported from Queensland and the Northern Territory in April, May and June (diagnosis confirmed by histology). *Bonamia* spp. (but not *Bonamia ostreae)* was reported from Tasmanian oysters in April 1999.

As part of an active surveillance program on New South Wales prawn farms, a new syndrome, temporarily designated 'monodon ganglio-neuritus' (MGN), was recognised during April 1999. MGN was associated with minor to major losses (up to 50% mortality) in affected *Penaeus monodon* ponds on the farm during the middle to later stages of the 1998–99 growout period. Major histological lesions were confined to the nervous system. The cause of MGN has not yet been determined and preliminary transmission electron microscopy failed to show evidence of viral infection. Transmission trials and further virological studies are in progress in an attempt to identify a causal infectious agent.

Quarterly aquatic animal health reports

Since June 1998, Australia has provided quarterly reports on its aquatic animal health status to the OIE Regional Office for Asia and the Pacific (internet address http://www.oie-jp.org/). These reports contain information on the monthly status of 18 diseases of finfish, molluscs and crustaceans, information on serious disease events caused by non-listed diseases or diseases of an unknown aetiology, and an indication of the level of surveillance undertaken. This information also contributes to the annual reports provided to OIE Headquarters in Paris.

The information for these reports is provided by States and Territories via the respective Chief Veterinary Officer (CVO) or Director of Fisheries (DF). It is then compiled into a single report by the National Office of Animal Health, and the report is endorsed by each State/Territory (CVO or DF) and the Australian Chief Veterinary Officer and OIE delegate, Dr Gardner Murray. The reports are available on the internet)at http://www.affa.gov.au/ocvo/fhu.html).

For further information on disease reports, aquatic animal health issues, copies of AQUAPLAN, or specific information on AQUAPLAN projects please contact:

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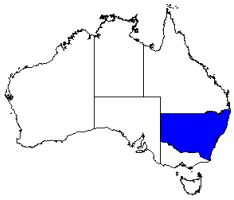
Contributed by Eva-Maria Bernoth, National Office of Animal and Plant Health

State and Territory Reports

New South Wales



Contributed by:
Evan Sergeant
NSW Agriculture

Infectious bursal disease

Two outbreaks of infectious bursal disease (IBD) were diagnosed on North Coast broiler farms during July and August. The main clinical feature was a sharp peak in mortalities over a 4 or 5-day period in affected sheds. Age of onset ranged from 30–40 days of age. Shed mortality was less than 1% daily, and for the whole episode did not exceed 2% per shed.

The main post mortem finding was a gelatinous layer of oedema fluid on the serosal surface of the bursa, which in some birds was enlarged to twice its normal size. Spleens were slightly enlarged, and kidneys sometimes had urate retention. Seroconversion in surviving birds confirmed the rapid spread of IBD infection within affected sheds.

The IBD virus isolated was shown by nucleotide sequencing and monoclonal antibody profiling to be consistent with known Australian strains of IBD, and not a very virulent IBD virus of exotic origin.

The birds were from vaccinated breeders, and should have been protected by passive immunity up to 35 days of age. Very virulent IBD virus causes a daily mortality rate of up to 4% and can cause disease in passively immune birds less than 35 days old.

Laboratory investigations promptly excluded the possibility that an exotic disease was responsible for the mortalities. A program of broiler IBD vaccination will be undertaken on these farms.

Cattle abscesses — bovine actinobacillosis

There have been an increased number of cases of *Actinobacillus lignieresii* diagnosed this year. In some cases, only individual animals are affected, though in others the disease has occurred in several animals. Cases have included 4 of 35 steers with 8–15 cm diameter soft masses under the jaw, 7 of 30 bull calves with submandibular abscesses, and 8 of 2000 18-month-old animals with clinical wooden tongue and a further 40 with large abscesses on the face, throat and parotid area.

It is thought the increased number of cases is associated with good growing conditions last spring. *A. lignieresii* is a normal inhabitant of the oral cavity of ruminants, and infection of surrounding soft tissues results after traumatic damage due to abrasive feed material or grass awns. A check of the reports of facial abscesses in this area found the two years with the highest number of cases (1993 and 1999) had wet winters the previous year.

The 1999 spring is beginning to look as if it will be an excellent growing season for much of the State, with above average rainfall in late September and early October. This may lead to an increased prevalence of abscesses in cattle in 2000.

Ovine Johne's disease surveillance

At the end of September, 483 flocks had been identified as infected for ovine Johne's disease (OJD) since 1980, with 432 (1.4% of the State's sheep flocks) still having an infected status. Of the currently known infected flocks, 321 (74%) are in the Residual Zone. About 6% of flocks in the Residual Zone are known to be infected, compared to less than 0.5% in the Control Zone.

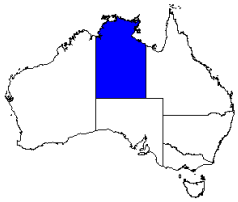
The first confirmation of OJD in the Tamworth Rural Land Protection district was made in a flock that is closely related to an infected flock in the Central Tablelands area.

TSE surveillance

During the quarter, 105 submissions were received for the National Transmissible Spongiform Encephalopathy (TSE) Surveillance Program. All submissions were negative for TSE, with diagnoses including hypomagnesaemia, hypocalcaemia, nasal granuloma, polioencepholomalacia, osteoarthritis and hepatic atrophy.

With 107 cattle and 143 sheep examined for the year so far, NSW is well ahead of the annual targets of 100 and 153 for cattle and sheep respectively.

Northern Territory



Contributed by:
Diana Pinch
NT DPIF

Horses

A property in the northern Tennant Creek district reported losses, ataxia and diarrhoea in 50 horses mustered during the quarter. Birdsville horse disease was diagnosed on the basis of clinical signs and the amount of *Indigophera linnae* found in the paddock. The acute period of poisoning probably occurred months before, when the causative plant was green, and the horses affected now are chronic cases. Birdsville disease in horses from northern properties is less common, because of the abundance of other sources of feed.

Cattle

Tennant Creek staff investigated deaths in castrated weaner steers on a Gulf property. The deaths occurred three days after castration. Although the clinical signs were consistent with clostridial infection, laboratory culture of tissues suggested a mixed bacterial infection with gram negative anaerobes, *Arcanobacterium pyogenes* and *Pasteurella multocida*. No clostridium species were isolated from any of the samples submitted. The station altered its procedures to reduce the potential for contamination of the castration site. The result was a reduction in losses.

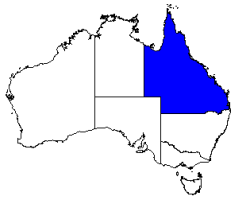
Poultry

Botulism was diagnosed in two small poultry flocks in the Darwin rural area. The history, clinical signs and post mortem findings were consistent with botulism. Subsequent mouse testing confirmed type C botulinum toxin in the serum of birds sampled.

Bovine tuberculosis

There were two tuberculosis (TB) lesions identified through the National Granuloma Submission Program during the quarter. Both lesions were in lymph nodes from cows from two properties in the Darwin region. The properties have undertaken destocking and TB testing, and no further lesions have been detected.

Queensland



Contributed by:
Janet Berry
Queensland DPI

Exotic disease exclusion

As a good example of enhanced active surveillance, in addition to the routine tests for bluetongue, Akabane and bovine ephemeral fever, one of the northern National Arbovirus Monitoring Program sentinel cattle herds was tested for both Japanese encephalitis (by the competitive ELISA) and surra (by the card agglutination test). All samples were negative.

Numerous submissions of maggots from the north and the Torres Strait Islands have been forwarded for a differential diagnosis for screw-worm fly. *Chrysomyia bezziana* has not been found. and the diagnosis is usually other *Chrysomyia* spp.

A three-year-old pony near Brisbane died suddenly with signs of bloody nasal discharge, blood in trachea and bronchi, and haemorrhagic and consolidated lungs. Samples collected at autopsy were submitted to AAHL to exclude Hendra virus. Lung tissue was negative to an indirect immunoperoxidase test and Hendra virus was not detected in lung or spleen samples.

Johne's disease in a farmed deer

Mycobacterium paratuberculosis has been isolated from an aged red deer hind that was reported as a suspect case of Johne's disease last quarter. One mesenteric lymph node had a mild multifocal granulomatous lymphadenitis with acid-fast bacilli in sections. At the Elizabeth Macarthur Agricultural Institute, NSW, mycobactin-dependant colonies with morphology typical of *M. paratuberculosis* were cultured and typed as the cattle strain using PCR testing. The hind had been introduced to Queensland from NSW in 1990. It was suffering from emaciation and severe cattle tick infestation.

Glasser's disease

Glasser's disease due to *Haemophilus parasuis* was diagnosed on four properties near Toowoomba, reflecting increasing detection of this disease. On three of the properties, growing pigs were affected

and about 100 deaths occurred in one group of 6-month-old pigs. On a fourth property, 7-week-old piglets showed clinical signs. Pathological changes recorded included polyserositis, arthritis, bronchopneumonia and synovitis.

Strangles

Strangles has been diagnosed in horses in four locations in Queensland. *Streptococcus equi similis* was isolated from an initial sampling of horses at Mt Isa that showed purulent nasal discharge, submandibular swelling, and abscessation. *Streptococcus equi* was isolated from a subsequent case as well as from horses on three independent properties near Toowoomba.

Sporadic bovine encephalomyelitis

A group of 13 newly weaned heifers near Winton were seen to be showing slight signs of lameness and slight swelling of limb joints, particularly around the coronary band. Although they were still eating, one animal became recumbent and was destroyed for autopsy. Brain and lung tissues were positive for *Chlamydia* spp,. confirming a diagnosis of sporadic bovine encephalomyelitis.

Babesiosis

Cases of bovine babesiosis have been reported during the quarter and some deaths occurred. Tick fever (*Babesia bovis*) was diagnosed in steers in an export shipment of cattle from Karumba. About 28 Brahman-cross cattle from a property in the cattle tick endemic area died. The cattle were treated with flumethrin as a pour-on before shipment. Brain and liver smear samples confirmed the diagnosis. Stress associated with transport possibly led to a compromised immune state, making the animals more susceptible.

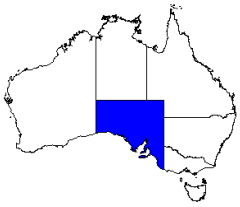
Blackleg

Confirmed cases of blackleg occurred, mostly in young steers and heifers. The most significant loss was on a property in the Banana Shire. In a short period, the producer lost 79 calves from a mob of 550 in a single outbreak of blackleg.

Bovine ephemeral fever

There have been widespread reports of bovine ephemeral fever across central Queensland, despite conditions being very dry. Populations of biting insects began to rise at the beginning of September with the onset of warmer weather.

South Australia



Contributed by:
Kim Critchley
Primary Industries SA

Enzootic bovine leucosis

After four years in which no new herds were detected with enzootic bovine leucosis, two were found at the same round of monitoring by bulk milk testing. Investigations are currently being conducted on these incidents.

Johne's disease

A single sheep on a mid-North property was found histologically positive for Johne's disease. DNA typing of the organism from the fixed specimen by the Western Australian reference laboratory determined that the organism was a cattle strain. A survey of cattle on the property and neighbouring properties was undertaken, but found no evidence of further infection.

As part of their market assurance for JD, many alpaca owners submit faecal samples from their animals for culture. Four animals on three properties had positive cultures of *M. paratuberculosis*, three of which have been typed as cattle strain, while the fourth result is still to come. Confirmation of these findings is currently being undertaken.

Erysipelas in pigs

There appears to be a changing pattern in the way erysipelas affects pig herds in the State. Although the textbook skin lesions and chronic joint and heart problems still occur, many properties are now reporting the disease to be responsible for a low but constant mortality in breeding pigs. This is occurring despite vaccination and suggests that pig producers may need to re-evaluate their current vaccine schedules.

Streptococcus suis

The pattern of infection with *Streptococcus suis* also seems to be changing, and there has been a gradual increase in its prevalence. The typical clinical

picture is meningitis causing 'paddling' in piglets. Infection can also produce a low level of ongoing mortality.

Aspiration pneumonia in calves

A group of three-month-old calves suffered a 20% mortality. Post mortem examination indicated aspiration pneumonia. The calves had been given their first oral worm drench a few days before the onset of the deaths.

Northern cattle deaths syndrome

The annual northern cattle deaths syndrome was reported in late September, a little earlier than usual. Typified by acute depression, haemorraghic colitis and enteritis, it may be associated with the early onset of summer. Investigations continue with a plant toxin being considered the most likely cause.

Annual ryegrass toxicity

A horse fed recently purchased hay containing annual ryegrass became ataxic and was eventually destroyed. Examination of the hay showed it contained 150 nematode galls per gram of ryegrass seed, a level considered significant.

Fish diseases

Pathological examination suggested that a sudden rise in mortality in a group of barramundi fingerlings was not due to an infectious disease. Before the problem arose, it had been considered water circulation was not adequate and the water system had been modified. Because this modification included the addition of a section of new galvanised pipe, zinc toxicity was considered as a cause of the deaths. Replacement of the galvanised pipe was followed by a rapid decline in the death rate.

In another case, barramundi fingerlings were reported swimming at the surface and jumping out of the tank. Pathological examination was inconclusive and further investigation indicated the problem began with a change in feed. Water analysis indicated high levels of nitrite present and it was suspected this resulted from the new feed. Flushing the tanks and replacing the water remedied the problem.

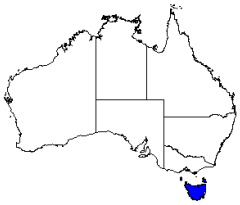
A rainbow trout operation suffered a cessation in water flow for about seven hours. Following this, there was an increased mortality rate. Although the fingerlings were fairly heavily stocked, increasing the flow rate did not improve the situation. Pathological examination found there was a heavy gill parasitism with *Chilodonella*.

Infectious laryngotracheitis

Despite vaccination of birds before placement, a layer farm continues to have outbreaks of infectious laryngotracheitis (ILT) in recently placed pullets. Vaccination of the birds as soon as they show signs of the disease quickly suppresses clinical disease. A study is being done to determine the reasons for the apparent failure of the vaccine to protect the recently arrived birds — the vaccine regime has been A20 followed by SA2 strain.

Tasmania

Contributed by:
John Elliott
DPIWE, Tasmania



Nutritional muscular mystrophy

A severe outbreak of nutritional muscular dystrophy was diagnosed in sheep grazing turnips.

Notifiable diseases

A number of notifiable diseases were reported during the quarter.

Listeria monocytogenes was isolated from two unrelated properties from cattle showing neurological signs and, from a third property, from a neonatal calf with a multi-bacterial infection.

Eight cases of salmonellosis were investigated, from cattle, sheep and alpaca. One of the cattle cases was salmonella group G, and the other cattle cases where group B. The sheep and alpaca cases were group C.

Two parrots were examined for *Chlamydia* and found to be negative.

European foulbrood was diagnosed in broodcomb from one bee producer.

Hydatid cysts were found in five samples of bovine offal and a laminated membrane was identified in

four of these samples. No scolices were identified in any of the samples examined. These samples came from lines of Victorian cattle that were being processed by a Northern Tasmanian meatworks.

A farmer reported a cow found dead with bloody discharge from the orifices. Smears and fluid samples taken from the carcase were examined for evidence of anthrax, with negative results.

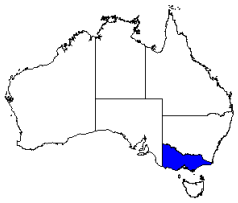
Two cases of toxoplasma abortion in sheep were diagnosed.

Ovine Johne's disease

During the quarter, samples from 10 flocks were tested for ovine Johne's disease and all were negative.

Victoria

Contributed by:
Tristan Jubb
DNRE Victoria



Cattle tick on horses

Live engorged female cattle ticks were found on three cutting horses that returned to Victoria after spending one month competing at events in Queensland. Infestation occurred in the Rockhampton area, where acaricide resistance is widespread. Acaricide resistance, combined with their pinpoint size at the time of tick inspection and treatment at the Queensland–NSW border, allowed the ticks to escape south of the tick line. Management in Victoria has included isolation of the horses from cattle grazing areas, as well as treatment and grooming, and a period of pasture spelling.

Tuberculosis in two dogs

Avian tuberculosis (TB) was diagnosed in a dog that had a habit of eating faeces of wild ducks. Human TB was diagnosed in a dog whose owner had been treated for TB. Both dogs were very sick and were euthanased.

Ovine brucellosis control

The third year of compulsory testing in the Mallee Ovine Brucellosis Control Area in north-west Victoria has been completed. This sheep–cereal cropping area has a large population of British breed rams that are used in the production of first-cross ewes and prime lambs. Ovine brucellosis was once widespread in the Mallee, with more than 50% of flocks infected. The prevalence of infected flocks is now estimated to be less than 8% in the 75% of the Victorian Mallee tested to date. In a voluntary scheme beginning last year involving 18 ram flocks in the Brim area of the northern Wimmera, an area immediately south of the Mallee Ovine Brucellosis Control Area, eight flocks were infected (44%) with between 25 and 75% of rams infected. These results are similar to those of a survey in 1982. All of these flocks now appear to have eradicated the disease.

Marek's disease

Rapid death without premonitory signs in 60 of 200 six-month-old Chinese silky bantams over one month was caused by acute Marek's disease, despite their careful vaccination by the owner as day-old chicks. Silky bantams are known to be very susceptible to Marek's disease.

Monensin poisoning

Monensin poisoning killed 18 dairy cows and probably caused abortion in eight others on a dairy farm in northern Victoria. Six calves were born blind with white eyes. Affected animals showed hyperaesthesia, lameness, limb oedema and scouring. Monensin in a loose mix feed additive had separated out in a silo and become concentrated at the end of each load. Tests on residue showed concentrations twice that of the recommended ration.

General

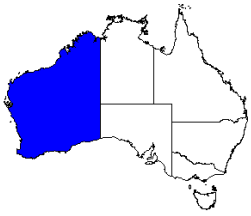
Tissue digests performed on diaphragm muscle from 666 feral pigs from NSW and Queensland were negative for *Trichinella spiralis*. This testing is performed as a requirement for export of pig meat to Russia.

Four fruit bats and two other bat species submitted for examination were negative for Australian bat lyssavirus. Sera from 50 fruit bats from the Melbourne Botanic Gardens were also negative for lyssavirus.

Samples from 81 cattle and 74 sheep had been received for the TSE surveillance project by the end of September. Victoria has targets of 85 cattle and 105 sheep TSE submissions in 1999. All submissions have been negative for TSE.

Western Australia

Contributed by:
Richard Norris
Agriculture WA



General

There were 648 investigations of animal disease requiring laboratory testing during the quarter. Of these, 253 were cost-recovery (private benefit) cases and 395 were charge-exempt (public benefit). Most of the investigations were for sheep (208 cases) and cattle (138 cases).

Johne's disease freedom

The National Standing Committee on Agricultural Resource Management (SCARM) declared Western Australia a Johne's Disease Free Zone for camelids, cattle, goats and sheep as from 10 September 1999. Since 1952, Western Australia has had six cases of Johne's disease in cattle and one in alpaca. In each case, the disease was introduced in an imported animal. Eradication was subsequently confirmed by extensive surveillance.

Exotic disease alerts

There were two investigations of unexplained deaths in poultry during the quarter and both tested negative for avian influenza and Newcastle disease. Two cases, one bovine and one ovine, were sent to AAHL for additional testing for TSE — both tested negative.

Notifiable diseases

Babesiosis occurred in cattle in the Kimberley and hydatid disease was detected at the Narrikup abattoir in sheep from Eneabba. No action was required on the babesiosis notification since the case occurred inside the prescribed Cattle Tick Infected Area.

Pig granulomas

The greatly increased prevalence of granulomas detected by the local health surveyor in pigs at a domestic abattoir was investigated. Laboratory testing showed that the granulomas, which were mostly confined to lymph nodes in the head, were caused by *Mycobacterium avium*, an environmental contaminant derived from birds. Subsequent field investigations confirmed that biosecurity was a problem at the piggery providing most of the cases. Birds had been allowed access to the grower sheds, and faecal contamination of the liquid feeding system helped to spread the organism, resulting in a high rate of infection. Biosecurity advice was subsequently given to the piggery manager. The issue is not a significant animal health problem and the Public Health Department is not concerned because the heads of these carcases are condemned and the organism does not cause health problems in humans.

Leucoencephalopathy in calves

A property in the Central Agricultural Region experienced a high proportion (more than 60%) of calves with leucoencephalopathy. The herd was a late-calving herd grazing tagasaste. Nearly all of the affected calves died. An in-depth investigation was conducted and provided strong evidence that exposure to tagasaste in late pregnancy is a risk factor for this condition. The information was relayed to growers at a tagasaste field day. Further study of the condition will be undertaken.

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.

Quarterly Disease Statistics

Laboratory testing

The results of serological testing for a range of viral diseases from routine laboratory submissions for the quarter are shown in Table 1.

Table 1: 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
Jul – Sep 98	1988	572	11438	1389	1622	261	525	4	594	0	576	4
Oct – Dec 98	1559	305	4976	397	957	163	3023	4	709	8	354	6
Jan – Mar 99	818	319	5061	250	1542	377	241	1	505	1	299	7
Apr – Jun 99	2410	443	6764	500	2092	348	1071	5	1252	3	564	13
Jul – Sep 99	1526	248	2004	172	923	182	1264	5	9539	5	832	69
NSW	70	3	218	10	150	8	281	0	6702	1	434	63
NT	547	91	375	79	427	91	0	3	0	0	0	0
QLD	243	115	270	62	199	67	312	0	549	4	12	0
SA	546	0	796	0	0	0	0	0	13	0	2	0
TAS	0	0	7	0	0	0	0	0	0	0	0	0
VIC	40	0	231	0	80	0	396	2	2006	0	225	6
WA	80	39	107	21	67	16	275	0	152	0	159	0

Control activities

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 142 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
Jul – Sep 98	218	0	2459	0
Oct – Dec 98	127	0	3278	0
Jan – Mar 99	178	0	3582	0
Apr – Jun 99	86	0	835	0
Jul – Sep 99	142	0	2339	0
NSW	30	0	148	0
NT	0	0	0	0
QLD	61	0	834	0
SA	13	0	538	0
TAS	18	0	20	0
VIC	0	0	119	0
WA	20	0	680	0

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 30 September 1999

NSW	NT	QLD	SA	TAS	VIC	WA	AUS
1250	0	70	527	129	729	86	2791

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 4 summarises results from the program. Two cases of TB were detected in the quarter in the 730 granulomas that were submitted.

Table 4: Results of the National Granuloma Submission Program

	Granulomas submitted	TB +ve
Jul–Sep 98	767	2
Oct–Dec 98	929	0
Jan–Mar 99	751	0
Apr–Jun 99	841	0
Jul–Sep 99	730	2
NSW	68	0
NT	42	2
QLD	383	0
SA	37	0
TAS	12	0
VIC	27	0
WA	161	0

Enzootic bovine leucosis

Enzootic bovine leucosis (EBL) accreditation programs have been operating in the dairy industries in Queensland and NSW for several years. Victoria, South Australia, Western Australia and Tasmania are undertaking a program of bulk milk testing of all dairy herds. Table 5 shows the number of dairy herds tested free of EBL at the end of the quarter.

Table 5: Dairy herds tested free of EBL at 30 September 1999

	NSW	NT	QLD	SA	TAS	VIC	WA	AUS
Free	1547	0	1608	726	679	7983	455	12 998
Herds	1743	0	1644	728	741	8453	455	13 764

Johne's disease

Johne's disease (JD) occurs primarily in dairy cattle and sheep in Australia and to a lesser extent in beef cattle, goats and camelids. JD occurs in NSW, Victoria, Tasmania and South Australia. Surveillance programs have not identified endemic JD in Queensland, Western Australia and Northern Territory, and active measures are taken to stamp-out any incursions. Table 6 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.

At the end of the quarter, 795 herds had assessed status in the Cattle Market Assurance Program (CattleMAP), 669 flocks in SheepMAP, and 50 herds in AlpacaMAP. After three years of development, GoatMAP has just been approved by Veterinary Committee — there are now two herds in GoatMAP (Table 7).

Table 6: Herds/flocks with JD at 30 September

STATE	Cattle	Sheep	Goats	Alpacas	Total
NSW	155	435	10	1	601
NT	0	0	0	0	0
QLD	0	0	0	0	0
SA	33	22	0	0	55
TAS	46	22	10	0	78
VIC	1829	71	9	11	1920
WA	0	0	0	0	0
AUS	2063	550	29	12	2654

Table 7: Flocks with a JDMAP status of at least MN1/TN1 status at 30 September 1999

STATE	Cattle	Sheep	Goats	Alpacas	Total
NSW	698	303	2	32	1035
NT	0	0	0	0	0
QLD	0	17	0	0	17
SA	59	216	0	13	288
TAS	3	24	0	0	27
VIC	35	109	0	5	149
WA	0	0	0	0	0
AUS	795	669	2	50	1516

Further information about components of the National JD Control Program can be obtained from State coordinators and AAHC's coordinators, David Kennedy 02 6365 6016 or Bruce Allworth 02 6036 9233.

Lists of beef, dairy and alpaca herds and sheep flocks assessed in the Market Assurance Programs are available on a fax-back service on 1902 940 579 or on the web at http://www.brs.gov.au/aphb/aha/jdmap.

Surveillance activities

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 8 summarises NAQS activity over the past five quarters.

Table 8: Summary of recent NAQS activity

	Jul – Sep 98		Oct – Dec 98		Jan – Mar 99		Apr – Jun 99		Jul – Sep 99		Note
	Tested	+ve	Tested	+ve	Tested	+ve	Tested	+ve	Tested	+ve	
Aujeszky's disease	67	0	157	0	25	0	96	0	84	0	
Avian influenza	68	0	322	0	21	0	80	0	0	0	
Bee mites	0	0	1	0	0	0	1	0	1	0	
Classical swine fever	61	0	157	0	25	0	96	0	84	0	
Duck virus enteritis	0	0	3	0	0	0	0	0	0	0	
Infectious bursal disease	37	0	39	0	35	6	85	31	0	0	a
Japanese encephalitis	141	0	440	0	370	0	230	0	39	0	b
Newcastle disease	68	10	320	1	20	0	80	1	0	0	c
Old world screw-worm	0	0	1	0	0	0	0	0	0	0	d
Porcine reproductive and respiratory syndrome	63	0	97	0	25	0	96	0	84	0	
Surra	123	0	204	0	134	0	44	0	193	0	
Swine influenza	72	0	157	0	25	0	48	0	0	0	
Transmissible gastroenteritis	66	0	97	0	25	0	0	0	0	0	
Trichinellosis	0	0	84	0	6	0	0	0	0	0	
Tropical canine pancytopaemia	15	0	14	0	20	0	7	0	3	0	

Notes

a Although mild infectious bursal disease (IBD) is endemic in poultry flocks and is occasionally found in wild birds, Australia is free of hypervirulent IBD virus.

b In 1995, 1996 and 1997, animals at sentinel sites on islands in the Torres Strait, but not the Australian mainland, seroconverted to Japanese encephalitis during the latter part of the wet season (March–April). In March 1998, 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. No seroconversion occurred in either Torres Strait or mainland sentinel herds during the 1999 wet season.

c These are serological positives that were detected in wild birds as part of regular wildlife monitoring in the Northern Territory. The antibody titres indicate that the birds had been exposed at some time to non-pathogenic strains of Newcastle disease virus. There was no evidence of clinical disease in the birds, and no history of mortalities in wild birds or poultry in the area at the time.

d These figures count *ad hoc* examinations of animals with lesions consistent with screw-worm fly infestation. In addition, three screw-worm fly traps are located at each of 24 sites in coastal areas across northern Australia. These traps are inspected monthly and no screw-worm flies have been found.

Contact: David Banks, AQIS

National Residue Survey

Of 3200 samples tested during the quarter for agricultural and veterinary chemicals, four (0.1%) had residues above the maximum residue limit (MRL). Of the two pig samples with antimicrobial residues above MRL, both were for oxytetracycline — only one was above the MRL recommended by the National Registration Authority (0.60 mg/kg in kidney). Other residues above MRL were a case of dieldrin (0.3 mg/kg) and one instance of 17-alpha-nortestosterone (0.0047 mg/kg) in cattle samples. Traceback investigation could not conclusively confirm the residue source for the 17-alpha-nortestosterone. However, low residues of this chemical have been found to occur naturally in pregnant cattle and, since the sample was taken from a cow, it was concluded this was the most likely cause of the residue. Table 9 summarises the results for the quarter.

Table 9: National Residue Survey, 1 July to 30 September 1999

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	60	0	4	0	100	0	12	0	3	0	33	0	8	0	220
pigs	0	28	0	0	0	15	0	5	0	3	0	17	0	5	0	73
sheep	0	79	0	0	0	7	0	10	0	3	0	32	0	28	0	159
other	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
Total	0	167	0	4	0	122	0	28	0	10	0	82	0	41	0	454
Antimicrobials																
cattle	0	104	0	17	0	166	0	13	0	9	0	72	0	11	0	392
pigs	1	103	0	0	0	73	0	30	0	6	1	119	0	24	2	355
poultry	0	78	0	0	0	0	0	0	0	15	0	21	0	36	0	150
sheep	0	42	0	0	0	4	0	12	0	6	0	23	0	19	0	106
other	0	5	0	0	0	5	0	3	0	1	0	5	0	0	0	19
Total	1	332	0	17	0	248	0	58	0	37	1	240	0	90	2	1022
Growth promotants																
cattle	0	133	0	8	1	197	0	27	0	17	0	73	0	11	1	466
pigs	0	6	0	0	0	5	0	2	0	0	0	10	0	0	0	23
poultry	0	9	0	0	0	0	0	0	0	1	0	1	0	2	0	13
sheep	0	80	0	0	0	6	0	8	0	2	0	25	0	21	0	142
other	0	8	0	1	0	31	0	6	0	0	0	21	0	6	0	73
Total	0	236	0	9	1	239	0	43	0	20	0	130	0	40	1	717
Insecticides																
cattle	0	110	0	16	0	162	0	18	0	12	0	58	1	10	1	386
pigs	0	20	0	0	0	21	0	8	0	0	0	17	0	5	0	71
poultry	0	15	0	0	0	0	0	0	0	3	0	1	0	8	0	27
sheep	0	147	0	0	0	19	0	28	0	7	0	55	0	47	0	303
other	0	4	0	4	0	2	0	3	0	1	0	2	0	0	0	16
Total	0	296	0	20	0	204	0	57	0	23	0	133	1	70	1	803
Metals																
cattle	1	25	0	0	4	31	0	1	0	2	0	11	0	2	5	72
pigs	1	11	0	0	1	5	0	5	0	0	0	15	1	3	3	39
poultry	0	18	0	0	0	0	0	0	0	3	0	2	0	5	0	28
sheep	0	25	0	0	0	5	0	4	0	2	0	15	1	4	1	55
other	0	0	1	1	0	0	0	0	0	0	0	2	0	0	1	3
Total	2	79	1	1	5	41	0	10	0	7	0	45	2	14	10	197
Miscellaneous																
cattle	0	33	0	2	0	65	0	10	0	4	0	22	0	9	0	145
sheep	0	31	0	0	0	0	0	3	0	1	0	12	0	7	0	54
other	0	1	0	0	0	2	0	0	0	0	0	2	0	0	0	5
Total	0	65	0	2	0	67	0	13	0	5	0	36	0	16	0	204

National TSE Surveillance Program

The OIE International Animal Health Code requires that countries, such as Australia, claiming to be free of TSEs have in place a surveillance system to detect bovine spongiform encephalopathy (BSE) and scrapie should they occur. The National TSE Surveillance Program (NTSESP) is an integrated national program jointly funded by industry and governments to demonstrate Australia's ongoing freedom from BSE and scrapie, and to provide early detection of those diseases should they occur.

Table 10 summaries the activity of the program over the past five quarters. Except for a small number of animals for which the specimens where unsuitable for testing, all the results were negative. Information about NTSESP is available on the internet (at http://www.brs.gov.au/aphb/ntsesp).

Contact: Chris Baldock, AAHC's NTSESP National Coordinator

Table 10: Results of TSE surveillance

	Jul – Sep 98		Oct – Dec 98		Jan – Mar 99		Apr – Jun 99		Jul – Sep 99	
	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep
NSW	22	25	11	16	29	59	31	26	47	58
NT	6	0	8	0	4	0	3	0	7	0
QLD	64	11	56	9	35	15	43	4	67	12
SA	12	8	3	2	0	2	0	0	0	0
TAS	2	2	2	2	0	0	0	0	0	0
VIC	16	8	66	127	12	25	17	28	10	7
WA	15	15	6	17	1	20	12	19	0	0
AUS	137	69	152	173	81	121	106	77	131	77
unsuitable	11	1	5	3	10	2	11	1	23	0
Nett total	126	68	147	170	71	119	95	76	108	77

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

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

Table 11: Salmonella notifications, 1 July to 30 September 1999

Serovars	avian	bovine	canine	equine	feline	ovine	porcine	other	Total
S. bovismorbificans	0	12	0	1	0	0	2	0	15
S. dublin	0	30	0	0	0	0	0	0	30
S. infantis	1	0	0	0	0	0	0	0	1
S. typhimurium	4	92	3	0	2	0	4	0	105
Other	11	19	6	0	2	0	6	16	60
Total	16	153	9	1	4	0	12	16	211

Zoonoses

The National Notifiable Diseases Surveillance System of the Communicable Diseases Network Australia New Zealand collects statistics about many human diseases. *Communicable Diseases Intelligence* (CDI) is accessible on the internet (at http://www.health.gov.au/pubhlth/cdi/cdihtml.htm). Table 12 summarises information for important zoonoses.

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

Table 12: Notifications of zoonotic diseases in humans

Disease	Q3-98	Q4-98	Q1-99	Q2-99	Q3-99	Current quarter							
	Australia				AUS	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Brucellosis	56	14	5	9	21	0	0	0	19	0	0	2	0
Hydatidosis	74	13	6	12	7	0	0	0	2	1	0	4	0
Leptospirosis	178	68	99	149	36	0	10	0	18	1	0	3	4
Listeriosis	41	15	14	11	22	0	5	0	5	2	0	5	5
Ornithosis	38	28	17	29	18	0	0	0	0	3	1	14	0
Q fever	680	148	128	128	112	0	32	0	64	2	0	7	7

Suspect exotic disease investigations

There were 26 exotic disease investigations reported during the quarter, as shown in Table 13.

Table 13: Exotic disease investigations reported during 1 July to 30 September 1999

Disease	Species	Date	State	Response (key below)	Finding
Australian bat lyssavirus	fauna	Sep 99	SA	3	negative
Australian bat lyssavirus	canine	Aug 99	QLD	2	negative
Avian influenza	avian	Aug 99	QLD	3	negative
Bluetongue	ovine	Aug 99	VIC	2	photosensitisation
Infectious bursal disease	avian	Aug 99	NSW	3	low virulence infectious bursal disease
Infectious bursal disease	avian	Aug 99	NSW	3	low virulence infectious bursal disease
Newcastle disease	avian	Oct 99	VIC	2	negative
Newcastle disease	avian	Sep 99	VIC	2	Marek's disease
Newcastle disease	avian	Sep 99	VIC	2	infectious laryngotracheitis
Newcastle disease	avian	Aug 99	SA	3	severe mycoplasmosis
Newcastle disease	avian	Aug 99	NSW	6	Newcastle disease — see page 3
Newcastle disease	avian	Aug 99	VIC	2	negative
Newcastle disease	avian	Jul 99	QLD	2	negative
Porcine reproductive and respiratory syndrome	porcine	Sep 99	NSW	3	negative
Porcine reproductive and respiratory syndrome	porcine	Jul 99	NSW	3	negative
Rabies	canine	Sep 99	NSW	2	behavioural change
Rabies	canine	Sep 99	NSW	2	behavioural change
Rabies	canine	Aug 99	NSW	3	meningoencephalitis
Rinderpest	bovine	Jul 99	QLD	2	St George disease
Screw worm fly	bovine	Sep 99	QLD	2	Australian flies
Tropical canine pancytopaemia	canine	Aug 99	NT	3	negative
Varroa mites	other	Sep 99	QLD	5	negative — see page 3
Vesicular disease	equine	Oct 99	VIC	2	negative
Vesicular disease	bovine	Sep 99	VIC	2	bovine viral diarrhoea
Vesicular disease	bovine	Sep 99	VIC	2	bovine viral diarrhoea
Vesicular stomatitis	bovine	Jul 99	TAS	2	actinobacillosis

KEY to 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 contacts

The National Animal Health Information System (NAHIS) is on the internet (http://www/brs/gov/au/aphb/aha). NAHIS collects summaries of animal health information from many sources. Because NAHIS does not duplicate the data in those systems, the relevant person indicated below should be contacted if further details are required.

Name	Role	Phone	Fax	e-mail
Chris **Baldock**	National NAHIS 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
Janet **Berry**	Qld State Coordinator	07 4658 4414	07 4658 4433	BerryJ@dpi.qld.gov.au
Chris **Bunn**	Emergency Disease Preparedness, AFFA	02 6272 5540	02 6272 3372	Chris.Bunn@affa.gov.au
Kim **Critchley**	SA State Coordinator	08 8207 7908	08 8207 7852	critchley.kim@saugov.sa.gov.au
John **Elliott**	Tas. State Coordinator	03 6336 5334	03 6336 5374	John.Elliott@dpiwe.tas.gov.au
Graeme **Garner**	Commonwealth 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
Ann **Holden**	National Granuloma Submission Program	02 6271 6676	02 6272 5442	Ann.Holden@aqis.gov.au
Tristan **Jubb**	Vic. State Coordinator	03 5430 4545	03 5430 4520	tristan.jubb@nre.vic.gov.au
David **Kennedy**	Ovine Johne's Disease 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
Geoff **Neumann**	CEO AAHC	02 6232 5522	02 6232 5511	aahc@aahc.com.au
Richard **Norris**	WA State Coordinator	08 9368 3637	08 9367 6248	rnorris@agric.wa.gov.au
Melanie **O'Flynn**	National Residue Survey	02 6272 4549	02 6272 4023	Melanie.Oflynn@affa.gov.au
Diana **Pinch**	NT Coordinator	08 8999 2354	08 8999 2024	diana.pinch@dpif.nt.gov.au
Evan **Sergeant**	NSW State Coordinator	02 6391 3687	02 6361 9976	Evan.Sergeant@agric.nsw.gov.au
Peter **Thornber**	International Coordination, AFFA	02 6271 6343	02 6272 5697	Peter.Thornber@affa.gov.au

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