ANIMAL HEALTH SURVEILLANCE QUARTERLY

Newsletter of Australia's National Animal Health Information System

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Quarterly Report for 1 January to 31 March 2000

Preface

The main article in this issue concerns the quarantine arrangements for horses competing at the Olympic Games. Updates on Newcastle disease and on methods being used to control Johne's disease are included. The later is particularly relevant, given the release of revised protocols for the market assurance programs in March.

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

Quarantine requirements for Olympic horses

The successful Sydney bid to hold the Olympic Games in the year 2000 was contingent on the equestrian events being conducted in Australia. The equestrian events for the 1956 Melbourne Olympic Games were conducted separately in Stockholm, because of the difficulties of long sea voyages for competition horses and Australia's stringent quarantine provisions for those Games. Nowadays, horses are flown into Australia, and import conditions are in place for horses from some 26 'approved' countries including the United States, Canada, the European Union, and Japan.

More than 250 horses competing in the Sydney Olympic Games will enter Australia under existing import conditions for horses for racing or competition purposes. Horses will depart from nominated hubs in Europe and North America between 21 and 25 August 2000 on freighters, each carrying about 55 horses, together with grooms and veterinarians. Following their arrival in Australia, Olympic horses will be quarantined at the Sydney International Equestrian Centre (SIEC), the Olympic site. During quarantine, the horses will have access to a full range of training facilities, including lunging rings, two large general training arenas, several jumping and dressage arenas, a cross country training course with obstacles, and an indoor arena.

One of the main diseases of concern with importing horses into Australia, whether for the Olympics, Melbourne Cup or for permanent import, is equine influenza. The disease is endemic in America, Europe and parts of Asia. Australia is free of this disease, and has an unvaccinated susceptible horse population. Equine influenza is caused by infection with influenza A/equine 1 (H7N7) or influenza A/equine 2 (H3N8). Influenza A/equine 2 viruses continue to cause major disease outbreaks worldwide. The disease has been introduced to several countries, including South Africa (1986), India (1987) and Hong Kong (1992), following the

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importation of horses by air from endemic countries and inadequate quarantine controls.

To minimise the risk of introducing equine influenza, all horses will be vaccinated before their departure for Australia, undergo pre-export quarantine for 14 days with isolation from other horses not of the same health status, and be certified free from clinical disease during the quarantine period. On arrival in Australia, horses will undergo a further 14 days quarantine under an all in/all out system. Following the completion of quarantine, the horses will remain on site under quarantine surveillance. As an additional safeguard for the Olympics, all horses will remain on the Olympic site until their departure from Australia.

Existing measures in place to minimise the risk of disease introduction with horses imported for competition purposes such as the Olympics include:

- Limiting imports to horses that have resided for at least two months in an approved country that is free of serious exotic diseases such as African horse sickness, dourine and glanders. It is expected that most horses qualifying for the Olympics will be based either in the European Union or North America.
- Official certification of freedom from specific diseases at a regional, premise and horse level.
- Pre-export quarantine in approved premises for a minimum of 14 days.
- Vaccination for diseases such as equine influenza and eastern and western equine encephalomyelitis.
- Testing horses for diseases such as equine infectious anaemia and vesicular stomatitis (with negative results).
- Requiring competition horses to travel with passports containing records of vaccination and movement.
- Permitting travel to Australia only by an approved route.
- Disinfecting the compartment of the aircraft housing the horse and disinsecting the plane before landing in Australia.
- Post-arrival quarantine in a gazetted quarantine site for a minimum of 14 days. The Olympic horses will be arriving in Australia in time to complete their quarantine before the Games.
- Management of wastes during quarantine.
- Testing of blood samples and tissue specimens at only approved laboratories.

To ensure that Australia's quarantine requirements are met, AQIS will have a veterinarian in Europe several weeks before the export of the horses. An AQIS veterinarian recently travelled to Europe to explain Australia's quarantine requirements to government veterinarians who will be supervising performance of pre-export quarantine and issuing health certification.

It is not only imported horses that undergo a period of pre-export quarantine. Australian Olympic horses will also undergo a two-week period of isolation before entering the Olympic site on 11 September 2000, following the completion of the post-arrival quarantine period for imported horses. This is to ensure that Australian horses are healthy at the time of entering SIEC and to assist in the departure of the foreign horses after the Olympics. Australian Olympic horses will also be tested for equine infectious anaemia and be vaccinated for equine influenza.

Management of quarantine standards at the Olympic site will be of the utmost importance, with 260 horses in quarantine and associated personnel entering and leaving the quarantine site. During post-arrival quarantine, all horses will be monitored for clinical signs of disease, including an elevated temperature. Sanitary measures to prevent disease spread during quarantine will include such things as protective clothing for people having close contact with horses and controls over the movement of clothing and equipment to assist in minimising spread of disease by fomites.

AQIS has worked closely with Australia's horse industry and veterinary experts to make sure Australia's domestic horse population remains as healthy as the elite animals competing in the Games. More detailed information about quarantine arrangements for the Olympic Games can be found on the internet (at http://www.aqis.gov.au).

Contact: Robyn Martin
Australian Quarantine and Inspection Service

Newcastle disease

During the quarter, NSW Agriculture and the Australian Animal Health Laboratory isolated virulent Newcastle disease (ND) virus, and/or PCR product with virulent sequence RRQRRF or variant sequence RRQKRL from five poultry farms in the western Sydney region and four in the Tamworth–Moonbi area. This was the first isolation of these viruses outside the Sydney and Central Coast areas. One farm was a breeder farm, one was a pullet-rearing farm, two were broiler farms and five were layer farms. (See also *AHSQ* Vol. 4, No. 4.)

Morbidity and mortality on the layer and pullet farms were very low. NSW Agriculture did not order depopulation of these farms and the birds remain in quarantine. Eggs are permitted to leave the farms subject to an approved sanitisation process. The owners of the two infected broiler farms and the breeding farm depopulated their farms voluntarily, and thoroughly cleaned and disinfected their sheds before restocking. The last birds to show clinical signs of ND were at Rossmore (western Sydney), on 24 February, and at a broiler farm at Moonbi that was depopulated on 2 March 2000.

During the quarter, there were no reports of ND from the vaccination area around Mangrove Mountain. Despite that, the Mangrove Mountain Control Area (mainly a broiler production area) remains in place. Owners in this area are voluntarily vaccinating their flocks, which are under surveillance by company veterinarians. Movement of broilers out of the area for processing is permitted. Movements of other poultry out of the area are permitted subject to health certification. Interstate movement controls are in place on poultry and product from quarantined farms and surrounding risk areas.

In March, the Standing Committee on Agriculture and Resource Management (SCARM) decided to permit the wider use of vaccine than was previously allowed. Owners of broiler flocks in the western Sydney and Mangrove Mountain areas are voluntarily vaccinating their flocks using V4 vaccine.

The poultry industry has accepted that it needs to assume greater responsibility for ND management. A National ND Management Committee was established in May to manage the transition of policy development and operations from government to a shared industry–government management group The objective agreed by this group is to achieve national ND-free status. To achieve this, the national management framework acknowledges the need for:

- quarantine, zoning and movement controls;
- slaughter-out of birds on infected premises;
- targeted strategic and controlled vaccination in at-risk areas;
- on-going surveillance;
- use of relevant legislation and agreements to underpin these actions; and
- equal cost-sharing by industry and governments.

Contributed by: Evan Sergeant
NSW Agriculture

Foreign language quarantine information

AQIS has just added to its web site the following documents in Arabic, Chinese, German, Greek, Indonesian, Italian, Japanese, Korean, Thai and Vietnamese:

- What can't be mailed to Australia?;
- On-the-spot fines;
- Quarantine Matters! (for travel agents);
- Important information for international students;
- Faster clearance of freight containers; and
- High risk pests found in imported cargo.

Another web document, 'What can't I take into Australia?', which has been in these ten languages for some time, is now available in French and Spanish. This information is available on the internet at (http://www.aqis.gov.au/language/index.htm) or by clicking on the 'Languages other than English' hyperlink near the bottom of the AQIS homepage (at http://www.aqis.gov.au).

Contact: Janice Oliver,
AQIS Public Relations (02) 6271 6377

National survey for Newcastle disease virus

From 1932 to 1998, Australia was considered free of virulent Newcastle disease (ND). However, over the past 21 months there have been a number of outbreaks of virulent ND in NSW, the first occurring in Sydney in September 1998 and the most recent in the Tamworth area in February 2000. There are currently eight properties still in quarantine in NSW. These outbreaks have been attributed to ND viruses (NDVs) that have arisen from a mutation of an endemic avirulent strain.

Until now, disease control and management activities have been hampered by the lack of information on the source of and potential distribution of virulent NDVs in Australia, or on the distribution of different avirulent strains of NDVs, some of which may have the potential to evolve into more virulent types.

To address this, a national survey of commercial poultry farms for NDVs has been designed by a working group of industry, government and AAHL. The objectives of the survey are to:

- collect information on the sero-prevalence of NDV positive flocks across Australia;
- identify possible risk factors for exposure to NDVs on Australian poultry farms; and
- collect information on the type and distribution of Newcastle disease viruses in Australian poultry flocks.

The information provided by this survey will allow the industry, in partnership with government, to:

- determine Australia's current status with respect to ND;
- assess the risks posed by ND to the Australian poultry industries;
- develop appropriate risk management strategies that can be adopted by the Australian industry to minimise the risk of future outbreaks of virulent ND; and
- develop recommendations on measures that individual farmers can take to reduce the risk of exposure of their flocks to ND viruses generally.

The survey is being undertaken over eleven regions across Australia. In each region, a minimum of 25% of all commercial layer farms, 30% of all broiler farms, all pullet-rearing farms and all breeder farms will be tested (by serology) to determine whether they have been exposed to NDV. Farms with positive serology will be revisited and further diagnostic samples collected. Any viruses isolated from these samples will be submitted to AAHL for genetic characterisation.

A short questionnaire will be completed for each farm sampled in the survey. The objective of the questionnaire is to collect information on potential risk factors affecting the presence and distribution of NDVs in Australian poultry flocks. The questionnaire will seek information on farm type, size, husbandry and management factors, as well as other possible risk factors (e.g. location, environment, presence of other diseases, and potential contact with wild birds).

The survey is a collaborative exercise involving Government and industry participation at all levels — from survey design to collection of samples and project management. The survey is being funded by the Commonwealth Government and State/Territory Governments and the poultry industries through the RIRDC Chicken Meat and Egg Programs.

The survey is now under way in all States. It is expected that all diagnostic samples will be collected by the end of July 2000 and that a report on the results of the survey will be available by the end of September.

Contributd by: Dr Vivien Kite
Australian Poultry Industries Association

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, Office of the Chief Veterinary Officer, AFFA.

1999–2000 Endosulfan Program

For the fourth year in succession, a program to monitor endosulfan residues was in place during summer (see *AHSQ* Vol. 3, No. 4). Against the backdrop of new, stringent label directions introduced by the National Registration Authority for Agricultural and Veterinary Chemicals (NRA) for endosulfan use on cotton, the 1999–2000 Endosulfan Program began on 1 November 1999, and ended on 3 March 2000. The start of monitoring coincided with the start of the period for which application of endosulfan on cotton is legally permitted. Properties were selected if they were located within certain cotton-growing local government areas — ten 'targeted' Rural Land Protection Boards (RLPBs) in New South Wales (NSW) and six 'targeted' Shires in Queensland.

In NSW, the program went for 18 weeks and 10 274 samples were collected from 3335 properties. In Queensland, the program went for 16 weeks (reflecting the shorter period of endosufan use) and 3826 samples were collected from 1075 properties. During the first four weeks of the program, only five cattle were found with residues (all less than 0.10 mg/kg). These results are consistent with field reports of low pest pressure and little endosulfan use in the cotton industry. Most early season applications to cotton crops were by ground rig rather than aerial spraying.

In week five of the program, there were 23 detections in Queensland cattle, all between 0.02 and 0.08 mg/kg. This coincided with a reported increase in pest pressure and resultant endosulfan spray activity in one shire in particular. Most of the low level (less than 0.10 mg/kg) detections in NSW occurred between weeks 10 and 15 and coincided with some increase in pest pressure and the last weeks of the period when endosulfan was able to be used on cotton.

Only one sample in NSW exceeded the export tolerance level (of 0.10 mg/kg). Traceback investigations identified that the producer failed to manage to prevent endosulfan contamination. In addition, there were 198 samples from 117 properties with residues within the range of 0.02 – 0.08 mg/kg of endosulfan. Enquires into these detections found that about two-thirds were related to endosulfan use on cotton, while for the rest the source was either untraceable or related to other endosulfan uses (such as on cereals).

Auditing by external providers (paid for by Cotton Australia and government agencies) indicated reasonable-to-good conformance with spray-drift management plans and newly introduced label requirements. Identified compliance problems were minor.

The results of 1999–2000 Endosulfan Management Program were encouraging, with a relatively small number of low-level detections, and no residues above the Australian MRL. There was a high awareness of potential residue problems among endosulfan users and cattle producers in cotton-growing areas as a result of problems last year, and a high degree of compliance with the new endosulfan label restrictions. However, the good results achieved in this program need to be balanced against the low pest pressure seen during the season and the reduction — possibly 20% — in the amount of endosulfan used compared with 1998–99.

Contributed by: Jonathan Webber
National Residue Survey

Disease preparedness

AUSVETPLAN update

A revised version of the Decontamination Manual was published in May. The development of AUSVETPLAN manuals for bovine brucellosis, contagious equine metritis and surra is nearing completion. All the manuals in the AUSVETPLAN series are on the internet but have moved from the old NAHIS site to the new Animal Health Australia site (at http://www.aahc.com.au/ausvetplan).

TSE Workshop

A workshop on transmissible spongiform encephalopathies (TSEs) was held in Canberra in March to review international developments and to consider the adequacy of Australia's implemented measures against these diseases. The workshop began with an update of scientific developments and an overview of European Union rules and the ban on feeding ruminant protein to ruminants.

Professor Colin Masters described advances in the diagnosis of TSEs including genotype analysis and methods for detecting the disease agent with monoclonal antibodies. These methods may eventually be applied to the diagnosis of pre-clinical disease. Professor John Matthews described the human health policy implications of TSEs and other speakers talked on the implications of the TSEs with the use of pituitary hormones and blood transfusions in people.

Dr Bob Biddle, Australia's Deputy Chief Veterinary Officer, outlined policy issues related to animals. These included Australia's trading interests, international standards relating to TSEs, and the role of the Office International des Epizooties (OIE) and its codes and standards. Australia has sought formal recognition from OIE of its BSE-free status, but the process of accreditation has not yet been completed. The meeting was reminded of the devastating impact of BSE on international trade.

A complete report of the workshop is available on request.

Contributed by: Chris Bunn
Office of the Chief Veterinary Officer, AFFA

The Australian Johne's Disease Program

Animal Health Australia coordinates national programs to control and evaluate Johne's disease (JD). These are collaborative programs between governments and the livestock industries. This article summarises developments with JD control in Australia.

Zoning

As mentioned in *AHSQ* Vol. 4, No. 2, zoning for bovine JD (BJD) began in August 1999 with Western Australia being free; the Northern Territory, Queensland, and a large part of New South Wales, Protected Zones; South Australia (SA), Victoria and some parts of NSW, Control Zones; and Tasmania, a Residual Zone. Since then, other NSW districts and northern SA have become Protected Zones.

Zoning was introduced in July 1999 for ovine JD (OJD) to help stem the spread of infection from high-risk areas. Western Australia is a Free Zone. Most of the rest of Australia is currently classified as a Control Zone, with part of central/southern NSW and Flinders Island (Tasmania) being classified as Residual Zones. Owners in Residual Zones who want to sell or move sheep to Control Zones must have an assessed status under SheepMAP or be tested to a similar standard. As part of the national OJD program (NOJDP), costs for testing sheep flocks and goat herds to this standard are met fully for producers in the Residual Zone in NSW (50% from NOJDP surveillance funds, 50% from NSW Industry funds) and 50% subsidised for producers on Flinders Island (NOJDP surveillance funds).

Evaluation of bovine Johne's disease

An evaluation of current BJD programs is being undertaken to form a basis for future planning of control programs for JD in the cattle industry. The $340 000 evaluation is funded by the Cattle Council of Australia, Australian Lot Feeders' Association, and Australian Dairy Farmers' Federation. External reviews are being undertaken in ten main areas:

- surveillance methods for JD in cattle;
- quantification of assurance and risk in the CattleMAP;
- national JD information systems
- national communication project;
- sensitivity of the absorbed ELISA for cattle;
- potential application of pooled faecal culture ;
- effectiveness and impact of CattleMAP;
- epidemiology and pathogenesis of JD in cattle;
- State control programs for infected herds; and
- evaluation of simulation models for JD.

The outcomes of these projects, together with increased surveillance, will be used to help plan the future of BJD control in Australia.

BJD surveillance

Veterinary Committee has established a BJD Technical Advisory Group to advise on issues of zoning and surveillance. Because most of the known infected herds in districts hoping to move to Protected Status in the future are dairy herds, it had been proposed that beef and dairy industries could be considered separately in applications for higher-zone status. A strategy to assess the BJD status of the beef breeding industry in south-eastern Australia is being considered. It is aimed at providing background data for planning the future direction of BJD control nationally and at deciding whether some of the restrictions on trade of replacement cattle to Protected Zones can be eased.

Tasmania is undertaking a program with national support to determine the extent of BJD in the State's beef industry by testing up to 300 herds (see Tasmanian State report). The results so far have been encouraging, with only one infected herd found. The program will help Tasmania decide whether to move towards a control program for BJD.

Market assurance program

Reviews in 1999 strongly recommended that owners and approved veterinarians have more flexibility in managing their assessed herds and flocks. Revised Market Assurance Programs (MAPs) for cattle and sheep were launched in March 2000. Herds and flocks need not now advance to a higher status every two years. Owners can elect to maintain status by annual veterinary audit and Maintenance Testing every two years (or three years for MN3 status). Another significant change is that breeding animals can be introduced under certain conditions in small numbers from herds or flocks of one status lower. The new flexibility in MAPs puts greater responsibility on owners to plan herd or flock management carefully with their veterinarian.

The new quality manuals for CattleMAP and SheepMAP are modelled on the quality assurance manuals for CattleCare and FlockCare, with explanations of why things are done, details of what has to be done and guides to the records that need to be kept. There are also forms to record or check-off compliance with the program and help develop herd and flock management plans.

At the end of March, more than 1000 cattle herds were enrolled in CattleMAP. There has been increasing interest in MAP, especially from herds in the Control and Residual Zones as producers look to the best ways of meeting market and regulatory demands for movement to higher-status zones. In addition to herds entering the MAP, herds are Check Tested (biased samples of 50 adults). It is proposed to introduce Check Testing as the minimum standard for cattle movements from Control to Protected Zones in July 2000. The minimum standard for movement from Residual to Protected Zones will be Monitored Negative 1 in the CattleMAP.

In February, the Victorian dairy industry and Government launched the JD Calf Accreditation Program (JDCAP). JDCAP is a voluntary, audited quality assurance program to accredit herds under which calves are reared according to a code to minimise the risk of their being infected with JD. The program is open to herds that are not known to be infected with JD. It has no testing requirements to assess true herd status, but is designed so that calves reared under the program will have a low risk of being infected.

National OJD program

A major issue for the program is uncertainty about State-based financial support for affected producers. A moratorium on compensation has been implemented in Victoria pending a review of the program there. There have also been difficulties in raising State-based levies to assist infected producers in NSW. This uncertainty has slowed progress in the control of OJD, but NOJDP has made significant progress, including:

- commencement of a number of key research trials;
- ongoing surveillance, including further on-farm investigations and implementation of abattoir surveillance in all States; and
- a national communications program.

Inspections for abnormal gross pathology in sheep at abattoirs started in late 1999. This allows a more rapid and cost-effective assessment of the distribution of OJD, particularly in those areas that to date have recorded little or no OJD. The sensitivity of the technique is being assessed, but it is proving effective in detecting established infection in flocks.

Johne's disease in deer

Queensland reported the first confirmation of infection in a deer in Australia in mid-1999. The animal was an aged female red deer, which was autopsied in April this year. The hind was one of 30 deer bought at a sale in NSW in 1990. The property had previously been a beef operation and had no history of chronic ill health in cattle. Another two unrelated cases have since been diagnosed on a Victorian property with lesions and typical signs. Tracing and further investigations are being undertaken.

Contributed by: David Kennedy and Bruce Allworth AHA's JD Coordinators

Animal Health Australia

Change of business name

In February, the Australian Animal Health Council Limited (AAHC) launched its new business name, Animal Health Australia, and a new corporate logo. The new name should greatly assist in recall and identification of Animal Health Australia activities.

Animal Health in Australia conference

Animal Health Australia, in conjunction with the Department of Agriculture, Fisheries and Forestry and the National Farmers' Federation, will be hosting an '***Animal Health in Australia — Securing our Future'* conference** on 2–3 November 2000 in Canberra.

The conference will bring together all sectors of the Australian animal health system, including the livestock industries, veterinary profession and governments. In keeping with the theme of the conference, '*Securing our Future'*, the program will encompass the challenges and opportunities facing Australia's livestock industries in the area of animal health. The conference will identify strategies for preparing Australia's animal health system to meet those challenges and take advantage of the opportunities.

New website for Animal Health Australia

Animal Health Australia recently launched its new website (at www.aahc.com.au). The site provides comprehensive information on animal health issues in Australia and on the animal health programs managed by Animal Health Australia, including a comprehensive Johne's Disease Information Centre. A functional communications centre is provided, where users can subscribe or unsubscribe to animal health publications and newsletters. A 'hot issues' section directs users to information on some of the key issues facing Australia's animal health system.

The Animal Health Australia site now incorporates the National Animal Health Information System (NAHIS) and promotes Australia's initiatives in emergency animal disease preparedness, including the AUSVETPLAN manuals. A direct entry to the NAHIS information is www.aahc.com.au/nahis and to AUSVETPLAN, www.aahc.com.au/ausvetplan.

Animal Health in Australia 1999

The *Animal Health in Australia* series provides an annual overview of animal health in Australia. The 1999 report includes information on Australia's animal health status, animal disease preparedness, and disease control programs. Copies of the report for 1999 are available on the Animal Health Australia website (at www.aahc.com.au/status/ahiareport/).

Contact: Michael Parolin
Communications Manager,
Animal Health Australia

Aquatic animal health

Aquatic animal diseases field guide

Australian Aquatic Animal Diseases Identification Field Guide, an easy-to-read guide to identify aquatic animal diseases, was released in March. The Field Guide provides an informative, pictorial, account of the diseases and organisms that threaten Australia's aquatic animal industries. It also has information on diseases found in other parts of the world and on how they could affect Australia if they were to occur here. It targets veterinarians, aquaculture and seafood processors, as well as recreational and commercial fishers, with a view to raising public awareness of the importance of aquatic animal disease management.

The Field Guide was developed by Agriculture, Fisheries and Forestry — Australia (AFFA) in close cooperation with industry, the States and Territories, other Commonwealth departments, the scientific community and the general public. The National Office of Animal and Plant Health coordinated its production. Copies of the 92 page full colour book can be obtained from the AFFA Shopfront for $12.00 plus $4 (P&H) — phone: 1800 020 157, or e-mail: shopfront@affa.gov.au. A descriptive flyer for the Guide is available on the internet (at http://www.affa.gov.au/nat-offices/aquatic).

Aquatic animal disease reporting

Since June 1998, Australia has provided quarterly reports on its aquatic animal health status to the Office International des Epizooties (OIE) Regional Office for Asia and the Pacific (www.oie-jp.org). These reports contain information on the monthly

status of 18 diseases of finfish, molluscs and crustaceans, plus information on serious disease events caused by non-listed diseases or diseases of unknown aetiology. The information is the basis of the annual reports to OIE Headquarters in Paris. Australia's latest quarterly report (Oct–Dec 1999) is now available on the internet (at http://www.affa.gov.au/nat-offices/aquatic/octdec99.html).

During December 1999, an outbreak of disease in juvenile farmed flounder in Tasmania was associated with florid gross and histological gut lesions resembling those caused by *Glugea stephani*, a significant microsporean parasite of northern Atlantic flat fish. *G. stephani* has not been described from Australia and has been regarded as exotic by the Australian Import Risk Analysis for non-viable finfish. The microsporean parasite from this outbreak has not been speciated. Previous reports of microsporea from the gut of Australian marine fish include *Glugea atherinae* from atherinids (hardyheads), cited in the risk analysis for non-viable finfish. Unidentified microsporea have been seen in the gut of wild and farmed flounder since at least 1993, but infection of this magnitude has not been recorded in Australia previously.

CCEAD covers aquatic animals

The Office of the Chief Veterinary Officer and the Fisheries and Aquaculture Branch, within AFFA, had cooperated to suggest modifications to the Consultative Committee on Emergency Animal Disease's (CCEAD's) Operating Guidelines and Terms of Reference to include aquatic animal disease emergencies. In March, the Standing Committee on Agriculture and Resource Management (SCARM) endorsed the revised Terms of Reference. This means that mechanisms for CCEAD consultation and advice on emergencies due to the occurrence of a suspected exotic disease in aquatic animals are now clearly established.

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Animal Industries Public Health Network

The Animal Industries Public Health Committee was established in 1996 for three years. In February 2000, the Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) endorsed the establishment of an Animal Industries Public Health Network (AIPHN) to continue the work done by the former Committee.

The Network will deal with ongoing and emerging veterinary public health issues. It will report to SCARM and the National Public Health Partnership Group (consisting of Chief Medical Officers for the Commonwealth and States/Territories). Issues will be referred to Veterinary Committee, the Communicable Diseases Network of Australia and New Zealand (CDNANZ), and other relevant groups for action.

The membership of the Network has not yet been finalised, but it will be a small group that draws on other expertise as necessary. The Commonwealth Chief Veterinary Officer, the Commonwealth Chief Medical Officer, and representatives of Animal Health Australia, Veterinary Committee, the National Farmers' Federation, the Australian and New Zealand Food Authority (ANZFA), CSIRO and CDNANZ will be included. Experts from areas such as environmental health, microbiological research, State policy, and State veterinary public health will also be included.

The Department of Health and Aged Care and Agriculture, Fisheries and Forestry — Australia (AFFA) will chair the network jointly, supported by the National Offices in AFFA.

Contact: Paula Svarcas
National Office of Food Safety, AFFA

NAHIS web site

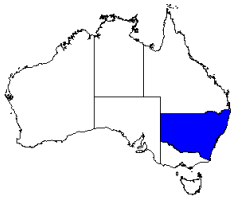
http://www.aahc.com.au/nahis **(new address)**

This newsletter, and information in the National Animal Health Information System, is available on the Animal Health Australia web site. The site provides information and statistics about animal health matters in Australia.

State and Territory reports

New South Wales

Contributed by:
Evan Sergeant
NSW Agriculture



Anthrax

During the quarter, there were five anthrax submissions, four of which (two each in beef cattle and horses) were negative. The positive case of anthrax was from a flock of 1900 sheep at Hillston, where 22 ewes of mixed ages died at a rate of one or two per day. *Bacillus anthracis* organisms were observed in smears of the spleen.

Venereal trichomoniasis of cattle

The confirmation of venereal trichomoniasis in a beef herd near Manilla indicates that this long-recognised but rarely confirmed disease should still be considered when investigating bovine infertility and abortion. This is the first case confirmed by NSW Agriculture's laboratories since 1994, when *Tritrichomonas foetus* was detected in a beef herd near Warren. The disease has also been confirmed on occasions in routine submissions to Queensland laboratories from southern Queensland.

The disease may be under-diagnosed. It was once quite prevalent in south-eastern Australia, and it remains quite prevalent in parts of North America and elsewhere. In northern Australia, targeted surveillance has indicated that up to 66% of bulls are infected.

Residue management

During 1999, only one property in NSW had an abattoir organochlorine (OC) test result that exceeded the applicable Australian maximum residue limit (MRL). This was a heptachlor epoxide residue of 0.21 mg/kg (MRL 0.20 mg/kg). The producer was rearing a few calves, and the residue source is thought to be soil contamination resulting from termite control treatments carried out by a previous owner of the property.

Abattoir test result statistics for 1999 supplied by the National Residue Survey indicate that there were 6590 NSW samples tested for OCs, a compliance rate of 99.98%. In addition to the one residue above MRL, there were 12 samples with residues higher than half MRL.

At the end of 1999, there were 170 NSW tailtags listed on the Enhanced Residue Program database for abattoir monitoring: 39 were at level T1; 33 at T2; 97 at T3; and 1 at T4. This compares with 206 tailtags on the list at the beginning of the year.

Ovine Johne's disease surveillance

By the end of the quarter, 512 infected flocks had been identified within NSW since 1980, with 451 (1.5% of the State's sheep flock) still having an infected (IN) status. Of these known infected flocks, 339 (73%) are located in the Residual Zone for OJD. About 6% of total flocks in the Residual Zone are known to be infected compared with than 0.5% of total flocks in the Control Zone. There were 20 new infected flocks reported during the quarter.

Abattoir surveillance is now under trial in NSW (and other States). By 31 March 2000, 2050 lines of sheep from the Control Zone, and 493 from the Residual Zone, had been examined as part of the NSW abattoir surveillance program, with 54 Control Zone lines and 152 Residual Zone lines being found to be infected.

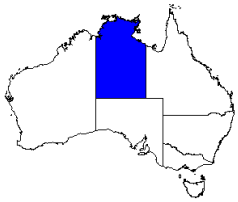
Braidwood Rural Lands Protection Board district progressed from a Residual Zone to a Control Zone during the quarter.

TSE Surveillance Program

During the quarter, there were 32 laboratory submissions, including 17 bovine and 15 ovine brains, for the National Transmissible Spongiform Encephalopathy Surveillance Program (NTSESP). The submissions required for NSW are 25 cattle brains and 38 sheep brains per quarter. There are delays between submission and notification onto the NTSESP database for a variety of reasons, especially because of the extra work involved if cases are referred to the Australian Animal Health Laboratory.

All samples were negative for TSE. Diagnoses for sheep samples submitted included haemonchosis, polioencephalomalacia and pneumonia; and, for cattle, mucosal disease, displaced abomasum and chronic bronchopneumonia.

Northern Territory



Contributed by:
Diana Pinch
NT DPIF

Cattle

Cases of bovine ephemeral fever were seen throughout the 'Top End' during the first quarter of 2000, especially in the Darwin region. Lame and recumbent cattle were observed, with loss of some stock. Seasonal conditions contributed to a favourable environment for the suspected mosquito vector. Virus was isolated from three clinical cases. Zamia palm poisoning, causing hindleg ataxia, also affects cattle in the Darwin region, and can complicate the clinical presentation and prognosis for affected cattle.

A monitoring program was developed after the detection of cattle ticks resistant to synthetic pyrethroid-based chemicals (Parkhurst strain) on two properties in Darwin a year ago. The program detected Parkhurst strain cattle ticks on a third property in the same region. Eradication programs are in place, as these are the only resistant cattle ticks known in NT.

An outbreak of diarrhoea in export steers occurred when the animals were given cracked corn. This resulted in lactic acidosis and twelve animals were sick, two with a mild laminitis as well as diarrhoea. The problem was resolved after the grain was removed from the feeding troughs.

Sentinel poultry

Sentinel chicken flocks located as far south as Alice Springs seroconverted to Murray Valley encephalitis virus and Kunjin virus during the quarter. These flocks are maintained in conjunction with Territory Health Services, to provide early warning of flavivirus activity.

Horses

Hendra virus was excluded as the cause of sudden death in a horse in the Katherine region.

Dogs

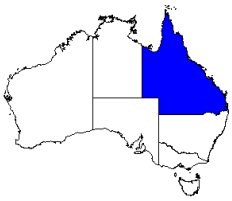
There were five submissions from dogs that had clinical histories and a range of laboratory findings consistent with acute canine leptospirosis. Sera from four of the five dogs were sent to the WHO/FAO Collaborating Centre for Reference and Research on Leptospirosis in Queensland. All four had antibody titres to *Leptospira interrogans* serovar *australis*. Leptospirosis (caused mainly by the serovar *australis*) occurs in dogs in north Queensland, but had not previously been noted in NT.

Parasites

The first record of *Amblyomma postoculatum* in NT was made from a tick that was found on a human. The attachment to a human was probably accidental. The host species for this tick has not yet been determined. Most other *Amblyomma* species are found on macropods or reptiles. This species has been recorded before from a hare wallaby and a human.

Spirocerca lupi, an uncommon parasite of the oesophagus in dogs, caused aortic rupture in a dog from Tennant Creek. The larval stage of this parasite spends 2–3 months in the aorta, and can cause degenerative changes sometimes resulting in aneurysms. *S. lupi* had previously been recorded in Alice Springs.

Queensland



Contributed by:
Janet Berry
Queensland DPI

Bovine ephemeral fever

Outbreaks and losses from bovine ephemeral fever (BEF) were reported early in the quarter in central and south-eastern Queensland. BEF virus was detected in cattle aged from 14 months to 5 years on three Darling Downs properties. One feedlot in the Emerald shire lost 3 of 160 head, with many clinical cases. BEF virus was isolated from Hereford cattle at Forest Hill (Lockyer Valley), and the disease was diagnosed on serological grounds in downer cattle near Bundaberg.

Bovine Johne's disease

A 12-year-old Salers cow on a property near Toowoomba was diagnosed with bovine Johne's disease (BJD). She was in poor condition and had profuse watery diarrhoea. Serological testing was positive for BJD and, on necropsy, Ziehl–Neelsen-stained sections of lymph nodes and intestine revealed large numbers of acid-fast bacilli. This stud cow had been introduced from New Zealand at six

months of age. All her progeny are still in the same ownership. The property has been quarantined and a surveillance program is in place. No further cases have been detected.

Colitis X in horses

An outbreak of disease occurred in horses stabled at a riding complex in Duaringa Shire in February. Colic was the principal clinical sign in all horses. No horse was febrile. Eleven cases were diagnosed from 40 horses belonging to about ten owners. Post mortem examination of one of the horses revealed severe colitis. Testing for a range of pathogens was negative. Blood tests on a number of sick and healthy horses gave negative serological results for Hendra virus and Potomac fever. There did not appear to be any particular pattern to the outbreak, and no association was found between diet or other management factors and this disease. The symptoms and lesions were consistent with colitis X.

Organophosphate poisoning

Organophosphate toxicity killed 38 of 52 Santa Gertrudis-cross cattle near Bundaberg within an hour of being sprayed with diazinon solution prepared from concentrate with an expiry date of April 1997. Analysis of the remaining concentrate found no diazinon, but rather its breakdown product TEPP, which is known to be highly toxic to mammals. Serum cholinesterase activities in five sampled cattle that survived were 39, 57, 69 and 135 IU/L (compared to the normal range 150–400 IU/L), confirming depression of cholinesterase activity consistent with organophosphate poisoning.

Copper poisoning

Copper poisoning was diagnosed as the cause of jaundice, sickness and deaths in six-month-old lambs. They were receiving copper-supplemented grain as a treatment for internal parasites on an organic farm. There were 20 affected animals including 15 mortalities out of a group of 400 lambs. A liver sample contained 686 mg/kg dry matter of copper, confirming copper poisoning.

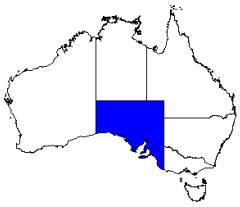
Haemonchosis in an alpaca

A diagnosis of haemonchosis was made in an aged Huacaya alpaca female from Palmwoods that had given birth two weeks previously. The animal became anorexic and recumbent, with pale mucosae and increased heart and respiratory rates. Autopsy, histopathology and parasitology results suggested haemonchosis as the cause of illness. *Haemonchus contortus* worms were seen and strongyle eggs were found in the faeces. This was only the second clinical case of haemonchosis in South American camelids seen at Yeerongpilly Veterinary Laboratory. The first occurred in 1997.

Mycoplasmal mastitis in goats

Mycoplasmal mastitis was diagnosed in a herd of 80 Saanen milking goats in which 47 had severe mastitis, with thin watery milk containing caseous clots. *Mycoplasma agalactiae* was isolated from milk samples. This organism has been isolated on previous occasions from goats with mastitis in Australia. Overseas, a variant strain of the organism causes contagious agalactia, which manifests either as an acute septicemia with a significant proportions of deaths, or as chronic mastitis, arthritis and ophthalmitis. Young goats and milking does are usually most severely affected. In this case in Queensland, does initially had mild diarrhoea and appeared unwell, but were not febrile and kids sucking from affected does continued to thrive.

South Australia



Contributed by:
Kim Critchley
PISA

Clostridia in lambs

Sporadic mortalities occurred in intensively housed fat lambs. The lambs had bloody dysentery shortly before death. The post mortem examinations suggested a clostridial infection, and *Clostridium perfringens* type A toxin was detected in gut samples.

Toxoplasma abortion in ewes

On one property, the maiden ewe flock exhibited a high abortion rate, while second parity or greater ewes were unaffected. Grossly, there was severe placentitis sometimes with small white foci. *Toxoplasma* organisms were demonstrated histologically.

Pig production in alternative systems

A number of producers have established free-range piggeries to service the perceived market for product from ‘pig-friendly’ husbandry systems. Many

problems not seen for many years have begun to re-emerge, among these being whipworm and carcase damage due to fight wounds. Erysipelas also occurs at a quite high prevalence and is frequently not controlled by vaccination. An investigation of abortions on one such farm indicated erysipelas as the likely cause.

Aquatic animals

Steptoccus iniae, diagnosed as the cause of problems in a barramundi enterprise, was initially controlled by antibiotics. A subsequent vaccination program does not appear to be providing good protection.

Although a high mortality in abalone was caused by vibriosis, it was considered that growing the abalone too close inshore — resulting in stress from the high water temperature during summer — predisposed them to the infection.

Capillaria infection was diagnosed in discus fish (an aquarium species).

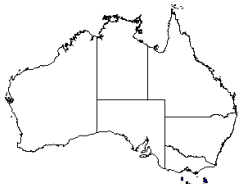
Footrot

Spring and summer were mild, but late summer and autumn were very hot, and followed by extensive rain. This may be responsible for the extended occurrence of footrot, with new cases being reported throughout the entire period.

A zoonosis

Samples from a pet rabbit suffering from dermatitis revealed the presence of *Cheyletiella* mites. When this was reported, the owners were asked whether they had rashes. All family members had an itchy rash, particularly the females who tended to cuddle the rabbit more. Their general practictioner was treating them with cortisone cream for allergic dermatitis, but not surprisingly, this seemed to make the itch worse.

Tasmania



Contributed by:
John Elliott

Bovine Johne's disease

A survey to determine the prevalence of JD disease in beef herds began during the quarter and is largely completed. In the survey, 49 herds were tested to Market Assurance program MN1/TN1 standards (250 animals) and 230 were tested to Check Tested standards (50 animals). Only one infected herd was found, indicating that the prevalence in beef herds can be low in a region with a high prevalence of BJD in dairy herds.

Notifiable diseases

An outbreak of salmonellosis was suspected in a dairy herd characterised by numerous mortalities and ill-thrift. However, salmonellosis was not conclusively diagnosed.

Salmonella Group B was isolated from four bovine faecal samples submitted from a different dairy herd in which 10% of 150 cows were sick.

The number of accessions during the quarter, and the results, for suspected notifiable diseases are summarised in the following table:

Disease	Animals	Accessions	
Species	Tested	Number	Positive
Hydatids			
Bovine	3	3	0
Salmonellosis			
Bovine	36	28	6
Avian	8	4	0
Ovine	5	3	1
Caprine	1	1	0
Wildlife	3	3	0
Q Fever			
Bovine	1	1	0
Ovine	14	3	0
Leptospirosis			
Bovine	6	5	2
Human	16	16	1
Ovine	1	1	0

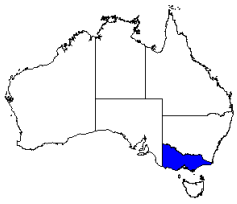
Mortality in broiler chickens

Investigation of a continuing mortality of around 1% in young broiler chicks in a large commercial flock revealed severe hepatic degeneration, with intestinal oedema and early necrosis. Contamination of feed, possibly with *Clostridium* sp., was suspected. Electron microscopy revealed that adenovirus infection (inclusion body hepatitis) was contributing to the ill-thrift and mortality problem.

Aspergillosis, pasteurellosis and colibacillosis were diagnosed as causes of ongoing mortalities of six-week-old chickens. Because the property of origin had a history of sporadic mortalities in young birds, material was referred for further examination.

Victoria

Contributed by:
Tristan Jubb
DNRE Victoria



National Livestock Identification Scheme

More than one million breeder and post-breeder tags endorsed by the National Livestock Identification Scheme (NLIS) have been distributed to Victorian beef producers and dairy farmers over the past 15 months (see *AHSQ* Vol. 4, No. 3). Approximately 15% of Victoria's cattle herd are now permanently identified with NLIS-endorsed tags.

Major saleyards throughout Victoria are installing readers in order to read the breeder and post-breeder tags on the cattle they sell. Links are being established to the NLIS database so that the purchasers of tagged cattle can be registered. The transaction history of cattle identified with NLIS-endorsed tags and traded in Victoria will be recorded progressively on the NLIS database. In future it will be possible to use this information for residue and disease-control purposes.

Victoria's export and domestic abattoirs are also installing readers and links to the NLIS database to enable better targeting of cattle for residue testing and for quality problems such as *C. bovis* and hydatid lesions.

Mosquito allergy in pigs

Pigs from three piggeries in central Victoria were affected with outbreaks of skin spots shortly after a peak in mosquito numbers. The skin spots were in the form of scattered nodules up to 1 cm in diameter, often with a central area of skin necrosis up to 3 mm in diameter. Microscopically the lesions were consistent with allergic dermatitis. Up to 10% of pigs were affected. One severely affected pig had vasculitis in the skin and kidney, which prompted investigation for pestiviruses and porcine reproductive and respiratory syndrome virus. Sera from 20 affected pigs and tissues from three affected pigs were tested and found to be negative.

Coccidiostat toxicity in chickens

A sudden increase in mortality and general flock depression in one of the three broiler sheds in a 22 000-bird broiler enterprise were attributed to coccidiostat toxicity, which was supported by clinical features and microscopic changes. About 600 birds died over two days and another 200 continued to show ataxia. Laboratory examination including serology and virus isolation were negative for infectious pathogens. Although coccidiostat levels in feed were found to be normal, a concentrated pocket of coccidiostat may have accumulated in the feed silo.

Spastic paresis

Six 1–4-month-old Angus calves in a mob of 60 on a beef property in Western Victoria showed signs of spastic paresis. All were lame with swelling of the carpus and hock joints, and the more severely affected animals exhibited continual hyperextension of the left hindleg. Pathological examination of two of the calves revealed no significant findings grossly or histologically, which is consistent with the diagnosis of spastic paresis. The dams of affected calves originated from one property in NSW. The origin of the sire could not be traced. As it is unusual for a number of animals in the one herd to show these signs, a genetic fault was suspected in this case.

Ryegrass staggers

In early February, three dairy farms in northern Victoria reported groups of staggering calves. These were diagnosed clinically as having ryegrass staggers, which is rare in the district. Testing of pasture showed toxic levels of lolitrems B and marginally toxic levels of ergovaline in the pasture. On one farm, 10 calves in a mob of 50 were staggering. One week later, one heifer was euthanased, four were continuing to show ataxia and putting their heads in the air, and five had recovered but had lost considerable condition. The rest of the mob remained unaffected.

Blue–green algae poisoning in cattle

Three 2-year-old heifers became sick and another three died on a dairy farm in northern Victoria. Autopsy revealed liver disease consistent with blue–green algae poisoning. Blood tests showed severe liver damage in the three survivors. The milking herd had access to a dam that was visually heavily contaminated with blue-green algae. The three main toxic types of algae were present on testing. Tracks

in the mud indicated that only about 12 cattle had been to the water in the dam. There was a water trough in the paddock, but it is probable that the heifers were excluded from access to the trough by more-dominant, older herd mates, and so were forced to drink from the dam. The dam has now been fenced off.

Salmonellosis in cattle

An outbreak of salmonellosis occurred on a dairy farm in northern Victoria causing diarrhoea in 55 out of 135 dairy cows, two of which died. The stock watered from a channel and troughs that sourced water from a small lagoon. Visually, the water looked clean and fresh, but *Salmonella typhimurium* 135 was cultured from this water and the scouring cows. A neighbouring farmer who sourced water from the same lagoon had six cows with similar symptoms.

Johne's disease in deer

Infection with bovine strains of *Mycobacterium avium paratuberculosis* was confirmed in two red deer, a 3-year-old hind and a yearling stag, from a 550-head property in south-western Victoria. The hind was introduced from another property, but the stag was bred on the affected property and is possibly the progeny of the hind.

The property itself had a history of bovine Johne's disease (BJD) infection of low prevalence when it was a dairy farm in the 1980s. There were beef cattle on the property at that time and there has been a gradual transition from dairy through beef to a deer enterprise. Deer were first introduced in 1996. The last suspected case of BJD was in a dairy cow bred on the property in 1990. The cow returned a positive result when tested by ELISA for interstate movement in 1993, but was histologically negative. The ten adult beef cattle still on the property have tested negative to ELISA for BJD. The source of infection has yet to be established. These are believed to be the first confirmed cases of BJD in deer in Victoria.

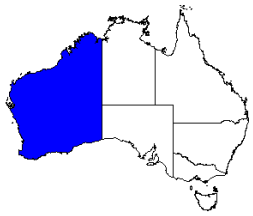
Equine respiratory disease

Multiple incidents of respiratory disease in standard breds, thoroughbreds and other horses on farms and premises across Victoria were mainly attributed to *Streptococcus equi* subsp. *zooepidemicus* and *Streptococcus equi* subsp. *equi*. Diagnosis was based on culture of nasopharngeal swabs and submandibular abscesses in most cases, but otherwise by clinical diagnosis only.

Equine piroplasmosis

A thoroughbred horse seropositive to *Babesia equi* was inadvertently imported from Hong Kong. The horse was re-tested and its seropositive status confirmed by the immunofluorescent antibody test (IFAT). The horse was euthanased. Autopsy did not show significant changes. Piroplasms were not detected on examination of smears of blood. Histopathology of intestines, lymph nodes, thymus, heart, muscle, kidney, liver and lungs showed no remarkable changes. Six other imported horses in the same shipment tested negative for *B. equi* by IFAT. The affected horse had been imported to Hong Kong from South Africa a year previously. Blood testing on stored sera showed that it was seropositive at the time of its introduction to Hong Kong.

Western Australia



Contributed by:
Richard Norris
Agriculture WA

Cattle

Several cattle died after being moving to an Esperance property. A cause was not determined, but toxic weeds were suspected. Congenital epidermolysis bullosa or pemphigus vulgaris were the possible causes of several dead calves at Yornup. At Albany, retinal and cerebellar dysplasia were seen in three red Shorthorn calves (with similarities to microphthalmia/hydrocephalus syndrome in white Shorthorns). Annual ryegrass toxicity caused the deaths of two bulls at Serpentine, serving a reminder that this disease can occur on the coastal plain. Pasteurellosis caused cattle deaths in a feedlot at Three Springs. Congenital myoclonus was seen in polled Hereford calves at Bindoon.

Sheep

Lupinosis was seen in many locations including Wongan Hills, Kojonup and Merredin. In a case at Dandaragan, it was associated with concurrent adenoviral infection. Fluoracetate poisoning was suspected in hoggets at Boyup Brook. An unusual

outbreak of copper poisoning, with hepatic encephalopathy, was seen in Poll Dorset ewes at Gnowangerup, but the source of the copper was not identified. Nervous signs in young sheep grazing sorghum at Kojonup was thought to be caused by cyanogenetic glycosides in the crop. Sedge (*Schoenus aspherocarpus*) poisoning, with typically massive hydrothorax, was seen in weaners at Mullewa. Salmonellosis was seen in adult ewes after trucking to Northampton. A fragile skin syndrome (possibly dermatosparaxis) was seen in 10-month-old Merinos at Collie.

Pigs

An extensive outbreak of pneumonia associated with *Pasteurella multocida* was seen in adult sows at Mount Barker. Lawsonia enteritis, associated with pneumonia, occurred in grower pigs at Popanyining.

Poultry

An ill-thrift syndrome associated with kidney disease was again seen in ostrich chicks on a Young's Siding property and cardiomyopathy caused the deaths of ostrich chicks at Dunsborough. Caustic gastroenteritis caused deaths in wild ducks at Boddington. An unusually high mortality rate in red-wing parrots at Broome was attributed to megabacteriosis. Salmonellosis was the cause of very high mortality in a quail production farm at Wagin.

Other species

Caltrop (*Tribulus terrestris*) poisoning in young goats at Meckering caused hepatic encephalopathy and nervous signs. Lymphocystis virus infection was diagnosed in barramundi reared in Perth. Sarcosporidiosis was suspected as the cause of respiratory disease in bluetongue lizards at a reptile centre at Armadale. Toxoplasmal encephalitis was seen in an echidna. Haplosporidiosis was the cause of heavy mortalities in oyster spat at Broome. Mortalities in farmed seahorses at Albany were thought to be caused by feed-induced abdominal emphysema.

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
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	839	70
Oct – Dec 99	1839	286	3092	218	1762	274	2665	8	1584	1	458	19
Jan – Mar 00	1778	741	6436	302	2336	508	1326	0	779	0	445	22
NSW	22	0	558	4	478	4	164	0	329	0	275	18
NT	727	477	783	142	768	374	0	0	9	0	0	0
QLD	375	253	3261	132	313	126	115	0	106	0	16	0
SA	0	0	312	0	0	0	0	0	27	0	16	0
TAS	0	0	57	0	0	0	23	0	0	0	0	0
VIC	66	0	237	0	229	0	1011	0	202	0	113	4
WA	588	11	1228	24	548	4	13	0	106	0	25	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 75 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
Jan – Mar 99	178	0	3582	0
Apr – Jun 99	86	0	835	0
Jul – Sep 99	142	0	2339	0
Oct – Dec 99	85	0	2648	0
Jan – Mar 00	141	0	2712	0
NSW	66	0	275	0
NT	0	0	0	0
QLD	10	0	581	0
SA	9	0	20	0
TAS	3	0	2	0
VIC	0	0	335	0
WA	53	0	1499	0

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 3 summarises results from the Program.

Table 3: Results of the National Granuloma Submission Program

	Granulomas submitted	TB +ve
Jan – Mar 99	882	0
Apr – Jun 99	842	0
Jul – Sep 99	776	2
Oct – Dec 99	639	0
Jan – Mar 00	861	0
NSW	90	0
NT	0	0
QLD	495	0
SA	77	0
TAS	15	0
VIC	41	0
WA	143	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 4 shows the number of dairy herds tested free of EBL at the end of the quarter.

Table 4: Dairy herds tested free of enzootic bovine leucosis at 31 March 2000

	NSW	NT	QLD	SA	TAS	VIC	WA	AUS
Free	1586	0	1595	716	679	7983	455	13 014
Herds	1705	0	1633	719	741	8453	455	13 706

Ovine brucellosis

Contagious epididymitis, caused by *Brucella ovis*, is present in commercial flocks at a low level that varies around the country. Voluntary accreditation programs (usually in stud flocks) for ovine brucellosis freedom are operating in all States. Table 5 shows the number of accredited flocks at the end of the quarter.

Table 5: Ovine brucellosis accredited-free flocks at 31 March 2000

NSW	NT	QLD	SA	TAS	VIC	WA	AUS
1250	0	72	517	130	722	86	2779

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 to be infected. A National Ovine Johne's Disease Control and Evaluation Program will be completed in 2003. Programs for bovine Johne's disease are currently being evaluated. Market Assurance Programs (MAPs) are in operation for cattle, sheep, goats and alpaca, with the number of herds or flocks that have reached a status of Monitored Negative 1 (MN1) shown in Table 7.

The number of herds assessed in CattleMAP reached 1000 during the quarter. Improved MAPs for cattle and sheep were launched in mid-March. The new programs are more flexible, as they allow herds and flocks to maintain status by less-intensive testing and permit introduction of stock under certain conditions. The new quality Manuals will greatly assist owners and approved veterinarians implement MAPs on farms and make them more easily audited. At this stage manuals are being distributed free to owners of assessed herds and flocks and to approved veterinarians by State Coordinators. A brochure has been published to promote market assurance and the new MAPs and State Coordinators have held successful refresher meetings for approved veterinarians and/or owners.

Access to lists of assessed MAP herds and flocks on the internet has moved from its temporary location within the NAHIS site to Animal Health Australia's site (at http://www.aahc.com.au/jdmap). The new site provides a search facility (by breed, area, etc.), rather than a list of all owners.

Table 6: Herds/flocks with JD at 31 March 2000

STATE	Cattle	Sheep	Goats	Alpacas	Total
NSW	137	451	10	1	599
NT	0	0	0	0	0
QLD#	1	0	0	0	1
SA	36	22	0	0	58
TAS	38	20	9	0	67
VIC	1916	35	12	12	1975
WA	0	0	0	0	0
AUS	2128	528	31	13	2721

the single herd in Queensland is a quarantine in response to finding an infected animal introduced from an endemic state.

Table 7: Herds/flocks with a JDMAP status of at least MN1/TN1 status at 31 March 2000

STATE	Cattle	Sheep	Goats	Alpacas	Total
NSW	836	313	19	59	1227
NT	0	0	0	0	0
QLD	0	15	0	0	15
SA	77	214	1	14	306
TAS	45	24	0	0	69
VIC	50	119	0	26	195
WA	0	0	0	0	0
AUS	1008	685	20	99	1812

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.aahc.com.au/jdmap — note the new web address.

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

	Jan – Mar 99		Apr – Jun 99		Jul – Sep 99		Oct – Dec 99		Jan – Mar 00		Notes
	Tested	+ve	Tested	+ve	Tested	+ve	Tested	+ve	Tested	+ve	
Aujeszky's disease	25	0	134	0	207	0	98	0	0	0	
Avian influenza	21	0	80	0	0	0	0	0	0	0	
Bee mites	0	0	3	0	1	0	1	0	2	0	
Classical swine fever	25	0	134	0	114	0	98	0	0	0	
Infectious bursal disease	35	6	21	0	0	0	1	0	0	0	a
Japanese encephalitis	414	0	245	0	76	0	154	0	309	23	b
Newcastle disease	20	0	80	1	0	0	0	0	0	0	c
Porcine reproductive and respiratory syndrome	25	0	135	0	207	0	98	0	0	0	
Screw worm fly	199	0	133	0	109	0	146	0	253	0	d
Surra	148	0	44	0	249	0	227	0	24	0	
Swine influenza	25	0	48	0	3	0	0	0	0	0	
Transmissible gastroenteritis	25	0	48	0	3	0	0	0	0	0	
Trichinellosis	6	0	0	0	0	0	0	0	0	0	
Tropical canine pancytopaenia	20	0	11	0	3	0	2	0	0	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. During the first quarter of 2000, sentinel pigs seroconverted on the island of Badu, but no clinical cases were detected in humans or animals.

c This is a serological positive that was 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. Three screw-worm fly traps are located at each of about 24 sites in coastal areas across northern Australia. These traps are inspected, usually monthly, and no screw-worm flies have been found. The figure tabulated is the number of times that traps were inspected during the quarter.

Contact: David Banks, AQIS

National TSE Surveillence Program

The OIE International Animal Health Code requires that countries (such as Australia) claiming to be free of transmissible spongiform encephalopathies have in place a surveillance system to detect BSE and scrapie should they occur. The National Transmissible Spongiform Encephalopathy 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 these diseases should they occur.

Table 9 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 9: Results of TSE surveillance

	Jan – Mar 99		Apr – Jun 99		Jul –- Sep 99		Oct – Dec 99		Jan – Mar 00	
	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep
NSW	28	55	33	26	53	51	33	26	27	21
NT	4	0	3	0	7	0	4	0	4	0
QLD	35	15	43	4	67	12	45	2	27	7
SA	0	6	0	0	4	8	3	1	2	0
TAS	1	4	2	0	5	0	2	3	1	0
VIC	12	25	17	29	39	30	22	20	5	12
WA	1	20	12	19	18	27	11	15	0	0
AUS	81	125	110	78	193	128	120	67	66	40
unsuitable	10	2	11	1	23	0	3	0	1	0
Nett total	71	123	99	77	170	128	117	67	65	40

National Residue Survey

Of 3823 samples tested during the quarter for agricultural and veterinary chemicals, 9 (0.24%) had residues above the maximum residue limit (MRL). Eight of these detections were for antimicrobials — two cattle and one horse samples for neomycin, and five pig samples for oxytetracycline (only two of which were above the National Registration Authority-recommended MRL of 0.60 mg/kg in kidney). The other contravention was the detection of a very low level of 17-alpha-19-nortestosterone from a heifer. Low levels of this chemical have been found to occur naturally in pregnant female cattle. Table 10 summarises the results for the quarter.

Further information about the National Residue Survey (NRS) can be found at http://www.nrs.gov.au on the internet where there are sections on:

- About the National Residue Survey;
- NRS staff contacts;
- NRS Annual Report 1998–99;
- NRS Results Report 1999 January–June;
- Monitoring of Chemical Residues in Farmed Animals, Game, Poultry and Eggs, July 1999 – June 2000 ;
- Recent publications and papers;
- Extension materials for residues in meat;
- Frequently asked questions;
- Information for laboratories; and
- Associated web sites .

Contact: Dr Rusty Branford
National Residue Survey

Table 10: National Residue Survey, 1 January to 31 March 2000

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	53	0	0	0	72	0	9	0	4	0	53	0	8	0	199
pigs	0	23	0	0	0	12	0	5	0	0	0	17	0	18	0	75
sheep	0	113	0	0	0	14	0	48	0	17	0	97	0	87	0	376
other	0	1	0	0	0	1	0	3	0	0	0	3	0	0	0	8
Total	0	190	0	0	0	99	0	65	0	21	0	170	0	113	0	658
Antimicrobials																
cattle	0	118	0	0	0	110	0	20	0	10	0	79	2	15	2	352
pigs	3	85	0	2	0	68	0	32	0	2	2	91	0	50	5	330
poultry	0	6	0	0	0	5	0	0	0	0	0	0	0	6	0	17
sheep	0	48	0	0	0	5	0	15	0	8	0	43	0	31	0	150
other	0	3	0	0	0	21	0	6	0	0	0	14	1	2	1	46
Total	3	260	0	2	0	209	0	73	0	20	2	227	3	104	8	895
Growth promotants																
cattle	1	131	0	0	0	167	0	9	0	15	0	100	0	22	1	444
pigs	0	7	0	0	0	5	0	4	0	0	0	2	0	3	0	21
poultry	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
sheep	0	52	0	0	0	7	0	20	0	4	0	51	0	55	0	189
other	0	9	0	0	0	15	0	7	0	0	0	8	0	2	0	41
Total	1	199	0	0	0	195	0	40	0	19	0	161	0	83	1	697
Insecticides																
cattle	0	159	0	0	0	175	0	18	0	17	0	92	0	29	0	490
pigs	0	12	0	0	0	23	0	12	0	2	0	14	0	8	0	71
poultry	0	7	0	0	0	3	0	2	0	0	0	0	0	2	0	14
sheep	0	263	0	0	0	28	0	69	0	27	0	130	0	163	0	680
other	0	22	0	1	0	38	0	14	0	0	0	14	0	0	0	89
Total	0	463	0	1	0	267	0	115	0	46	0	250	0	202	0	1344
Metals																
cattle	1	17	0	0	0	26	0	4	0	1	0	17	0	2	1	67
pigs	1	7	0	0	2	13	0	5	0	0	0	9	0	3	3	37
poultry	0	6	0	0	0	3	0	2	0	0	0	0	0	2	0	13
sheep	0	25	0	0	0	1	2	11	0	2	2	16	7	16	11	71
other	0	0	1	1	1	2	0	1	0	0	0	1	0	0	2	5
Total	2	55	1	1	3	45	2	23	0	3	2	43	7	23	17	193
Miscellaneous																
cattle	0	40	0	0	0	45	0	8	0	5	0	29	0	8	0	135
sheep	0	27	0	0	0	4	0	13	0	2	0	16	0	17	0	79
other	0	3	0	0	0	9	0	0	0	0	0	2	0	1	0	15
Total	0	70	0	0	0	58	0	21	0	7	0	47	0	26	0	229

Zoonoses

The National Notifiable Diseases Surveillance System (NNDSS) of the Communicable Diseases Network Australia New Zealand (CDNANZ) collects statistics about many human diseases. NNDSS was established in 1990 and coordinates the national surveillance of almost 50 communicable human diseases or disease groups endorsed by the National Health and Medical Research Council (NHMRC). The National Centre for Disease Control (NCDC) within the Australian Department of Health and Aged Care has responsibility for the NNDSS. The information in NNDSS is reported in the publication *Communicable Diseases Intelligence* (CDI), which is accessible on the internet (at http://www.health.gov.au/pubhlth/cdi/cdihtml.htm).

Notifications are made to the States or Territory health authority under the provisions of the public health legislation in their jurisdiction. Computerised, de-identified records of notifications are supplied each fortnight to the Network secretariat at the Department of Health and Aged Care for collation into NNDSS, analysis and publication in CDI, with the internet tables also being updated fortnightly.

Data provided for each notification include a unique record reference number, State or Territory code, disease code, date of onset, date of notification to the relevant health authority, sex, age, Aboriginality, post code of residence, and the confirmation status of the report. The completeness of data in the NNDSS is influenced by various factors. Each State or Territory health authority determines which diseases will be notifiable within its jurisdiction, and which notifications are accepted. The criteria for acceptance may differ from the NHMRC case definitions. In addition, the mechanism of notification varies between States and Territories. NCDC in collaboration with the State and Territories have been working towards a more uniform system with an expanded core data set and national data dictionary. A summary of information about six important zoonoses is submitted to NAHIS each quarter — see Table 11.

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

Table 11: Notifications of zoonotic diseases in humans

Disease	Q1–99	Q2–99	Q3–99	Q4–99	Q1–00	Current quarter							
	Australia				AUST	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Brucellosis	5	9	21	68	59	0	2	0	54	0	0	3	0
Hydatidosis	6	12	7	46	44	0	0	0	9	3	1	26	5
Leptospirosis	99	149	36	401	393	0	67	1	272	3	1	39	10
Listeriosis	14	11	22	76	84	0	25	3	15	6	4	15	16
Ornithosis	17	29	18	114	108	0	0	0	0	10	2	86	10
Q fever	128	128	112	656	661	0	189	0	411	11	0	30	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 12 summarises *Salmonella* isolations from animals notified to NSSS for the quarter

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

Table 12: Salmonella notifications, 1 January to 31 March 2000

Serovars	avian	bovine	canine	equine	feline	ovine	porcine	other	Total
S. bovismorbificans	0	7	1	0	0	0	0	0	8
S. dublin	0	14	0	0	0	0	0	0	14
S. infantis	1	0	2	0	0	0	0	0	3
S. typhimurium	2	29	2	9	2	0	13	5	62
Other	13	17	7	1	3	0	6	9	56
Total	16	67	12	10	5	0	19	14	143

Suspect exotic disease investigations

There were 21 suspected exotic disease investigations reported during the quarter as shown in Table 13.

Table 13 Exotic disease investigations reported during 1 January to 31 March 2000

Disease	Species	Date	State	Response (key below)	Finding
Africanised bees	apian	Feb	QLD	1	native bee
Anthrax	bovine	Feb	QLD	2	blackleg
	bovine	Feb	QLD	2	bracken fern toxicity
Avian influenza	avian	Mar	TAS	2	negative
	avian	Mar	SA	3	negative
	avian	Feb	VIC	2	coccidiostat toxicity
Aujeszky's disease	porcine	Mar	WA	3	negative
Australian bat lyssavirus	other	Jan	WA	3	negative
	other	Jan	WA	3	negative
Equine piroplasmosis (babesiosis)	equine	Mar	VIC	2	seropositive, imported animal
Foot-and-mouth disease	bovine	Mar	WA	3	negative
Newcastle disease	avian	Jan	NSW	5	see page 3
	avian	Jan	QLD	2	heat stress
	avian	Feb	NSW	5	see page 3
	avian	Feb	QLD	3	botulism
	avian	Feb	WA	3	negative
	avian	Mar	QLD	3	Mareks disease
Porcine reproductive and respiratory syndrome	porcine	Mar	QLD	3	suspect intoxication
	porcine	Jan	VIC	2	allergic dermatitis
Rabies	canine	Mar	WA	3	negative
Screw-worm fly	avian	Jan	QLD	1	negative
	caprine	Jan	QLD	2	*Chrysomyia* sp., not *bezziana*
Vesicular disease	bovine	Feb	QLD	2	metabolic disorder or bovine ephemeral fever

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) collects summaries of animal health information from many sources. NAHIS is on the internet (at **http://www.aahc.com.au/nahis)**. Because NAHIS does not duplicate the data in those systems, the relevant person 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
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
Neville **Spencer**	National Granuloma Submission Program	02 6271 6650	02 6272 5442	neville.spencer@aqis.gov.au
Peter **Thornber**	International Coordination, AFFA	02 6271 6343	02 6272 5697	Peter.Thornber@affa.gov.au