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QUARTERLY REPORT

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CONTENTS

Preface

Several articles in this issue deal with Australia's preparation for an outbreak of an emergency animal disease (EAD). A desk-top simulation exercise in the Northern Territory tested preparedness for a foot-and-mouth disease outbreak, and Australia's strategy for avian influenza was examined in a workshop that included participants from diverse backgrounds. There is an article on a new notification system for reporting terrestrial animal diseases to the OIE (World Organisation for Animal Health). Another article summarises government initiatives stemming from the 2003 'Frawley' Review of Rural Veterinary Services.

Other topics include highlights of disease surveillance activities, items of interest from States and Territories, and summaries of disease monitoring and surveillance 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. *AHSQ* is available on the Animal Health Australia website (at www.aahc.com.au/nahis).

Gardner Murray
Australian Chief Veterinary Officer

Exercise Noonamah

Exercise Noonamah, an emergency animal disease outbreak simulation, was held in Darwin between 7 and 12 March 2004. The capabilities of AUSVETPLAN, Northern Territory plans, local staff, and the recently assembled Rapid Response Teams (RRTs) were tested in a desk-top exercise of the State and Local Disease Control Centres (SDCC and LDCC). The exercise was based on a simulated outbreak of foot-and-mouth disease (FMD). Australia has been free of FMD since 1872. Exercise Noonamah was a success, and all objectives were achieved.

Noonamah, on the Stuart Highway in the Darwin rural area, is recognised as the hub of Darwin's live animal export operations. Live export is an important market for the top half of the Northern Territory's cattle industry, and Darwin is the nation's largest cattle exporting port. The scenario was based on a realistic volume and pattern of cattle movements for the middle of the dry season in the Darwin region and the Northern Territory.

Overall, 100 people were involved in the exercise. This is less than the number of people required to staff an LDCC and SDCHQ, so some people performed two roles. Thirty-five people were in the RRTs, 21 in exercise control (which included exercise directors, facilitators, umpires and simulators). The remaining 44 were local staff, from several departments, in the fields of emergency management; mapping, legal, wildlife, AQIS live animal exports, and the North Australian Quarantine Strategy. Industry liaison officers also took part. The

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exercise had no field or laboratory component. The first day was an induction with many briefings. The exercise then ran for three days, and by the end of the third day, many of the objectives had been met, the control centre was well advanced in dealing with the scenario, and the exercise was judged to be a success.

Highlights of the exercise included the efficient production of maps and data display. Maps are crucial for efficient control centre management and reporting to higher levels. Veterinary investigations located all the implicated properties, and Movement and Security and Infected Premises teams were able to deal with their situations in the Restricted Area. Logistics was able to keep track of many things, including all costs by the end of day three (about ten million virtual dollars had been spent). Planning (epidemiology) produced high and low case projections for seven and twenty-one days that provided an insight into the possible future cost of the response. The LDCC Legal team provided good advice. The wild animal rangers produced a surveillance strategy for feral pigs, which are common in the Darwin region. The Industry Liaison Officers worked hard to solve issues in the scenario and their contribution was well appreciated.

Information technology was a major success factor during the exercise, with a computer local area network (LAN) being set up within the ballroom layout of the building. Internet access was simulated. E-mail on the LAN was used as part of the exercise, as was telephone, fax and hand delivery. Paper-based message systems and data management are still important in a control centre. Learning how to set up an emergency management LAN rapidly (including the set up of the e-mail program to capture copies of all messages in the registry area) was a valuable part of the exercise.

Public relations and media management are a critical part of an emergency response, and were part of Exercise Noonamah. A communications plan was in place before the exercise to inform media, industry and government stakeholders. Letters were sent, media releases made, and interviews given at all levels. The objective was to develop the understanding that the event was a training exercise and to avoid any misunderstanding about Australia's actual animal health status. During the week, the print and radio media interest continued.

In the exercise debriefing, a major theme that emerged was the need to understand the roles of the various AUSVETPLAN positions and how they functioned in the control centres. Communication and information management are key factors in emergency management, and the exercise gave participants the opportunity to come to grips with their roles and responsibilities in a testing, but managed, scenario. The challenge of working in new teams in a stressful environment was also a valuable experience. RRT members were able to share their knowledge and skills in emergency management, and the local and practical knowledge of the local staff was a benefit to both teams. The debriefing also provided the Northern Territory staff with useful planning information. An action list has been developed that contains more than forty projects that will add to agricultural emergency preparedness in the Northern Territory. Some of these projects are also relevant to RRT and AUSVETPLAN.

Contributed by: Kevin deWitte, Department of Business, Industry and Resource Development, Northern Territory

Avian influenza workshop

In early March, a workshop was held in Melbourne to consider Australia's strategy for avian influenza (AI). The Wildlife and Exotic Disease Preparedness Program (WEDPP) hosted the workshop with the support of the Department of Primary Industries (Victoria). Because of the funding source, special emphasis was placed on the role of wildlife.

Participants from a range of organisations met to update and share their knowledge and to improve their understanding of the current situation. These organisations included Australian Government departments (Agriculture, Fisheries and Forestry; Health and Ageing; Environment and Heritage), State and Territory departments of agriculture, the Australian Animal Health Laboratory (AAHL), industry, the Australian Wildlife Health Network, Animal Health Australia, and the Australian Veterinary Association.

Speakers presented information on influenza in animals and humans, including evidence that low pathogenic strains of AI can become virulent.

Key conclusions were that:

- A multi-step pathway is required for domestic flocks to become infected with highly pathogenic avian influenza (HPAI) virus. That is, there are 'compartments' with AI virus flowing from migratory birds to waterfowl to commercial operations, and then between establishments, if circumstances allow.
- The risks for infection with AI viruses in the three

separate biological units — wildlife/waterfowl, free-range and commercial/intensive — are different, and each should be treated separately, especially in relation to surveillance.
- There is credible scientific evidence that low pathogenic (LPAI) avian influenza H5 and H7 subtype viruses mutate to HPAI, although the drivers for this transformation are not well understood. Contingency plans need to be updated for HPAI, and developed for LPAI, taking account of potential risks to human health.
- Australian response measures need to be kept under review in the light of changing international standards and other advice from the OIE (World Organisation for Animal Health).
- Close liaison between government departments of health, agriculture and the environment/ conservation need to be maintained.

A number of specific recommendations, particularly for surveillance and preparedness, were developed and have been forwarded to Animal Health Committee, or its working groups, for further consideration and action.

Contributed by Chris Bunn and Jill Mortier, Office of the Chief Veterinary Officer (OCVO), Australian Government Department of Agriculture, Fisheries and Forestry (DAFF)

'Frawley' Review takes off

The 2003 'Frawley' Review of Rural Veterinary Services (RRVS) is a wide-ranging document that has examined many aspects of rural veterinary activity and is now spawning a number of important government initiatives. The Review sought to determine the:

- future needs of Australia's livestock enterprises and industries and animal health system
- expected roles and requirements for veterinarians in meeting these needs
- requirements to ensure people with the required veterinary and veterinary-related training and expertise are available where and when needed.

A major initiative resulting from the Review is the Australian Veterinary Reserve (AVR), to be launched at the annual AVA conference in Canberra in May. The idea of having a trained group of veterinarians available in the event of a crisis has been under consideration for some time, and now is finally being realised. Avian influenza in Asia and last foot-and-mouth disease epidemic in the United Kingdom in 2001 raised awareness of Australia's vulnerability, and both events called on Australian expertise to assist. Although quarantine vigilance and natural geographical advantage have protected Australia in the past, the establishment of an AVR will be important to maintain the security of Australia's animal health in the event of an emergency.

The AVR offers paid training and participation in emergency animal disease exercises for non-government veterinarians, and is part of a wider strategy to develop better integration of veterinary services, particularly in rural areas. The opportunity for governments to use the skills of rural practitioners and offer them opportunities for diversification by involving them in government programs should result in a collaboration that will benefit all parties.

Other major areas identified by the Review to be progressed are national surveillance and diagnostic capabilities. With the focus on integration of non-government veterinarians, these three areas are managed by steering committees with representation from government departments, industry, academia, Animal Health Australia, and the Australian Veterinary Association. Projects will be managed through the Australian Government Department of Agriculture, Fisheries and Forestry.

Developing electronic surveillance networks among non-government veterinarians is just one of the projects to be undertaken, as well as the development of a national risk assessment framework for surveillance and support for the enhancement of wildlife disease surveillance systems (in collaboration with the Australian Wildlife Health Network).

Related initiatives since the release of the Review have been the establishment of AQIS scholarships for rural veterinarians; the opening of a veterinary faculty at Charles Sturt University's Wagga Wagga campus in NSW (training 'in the country for the country'; first intake of students in 2005); and the approval of funding to develop a national framework for veterinary registration.

For further details about the Australian Veterinary Reserve, e-mail ahc@daff.gov.au, see the internet (www.daff.gov.au), or telephone 02 6203 3922.

Contributed by: Jane Bennett, Strategic Policy Unit, DAFF

Changes to OIE notification requirements

In January 2005, OIE (World Organisation for Animal Health) will implement a new notification system. A single list of notifiable terrestrial animal diseases will replace the current Lists A and B. This approach is in keeping with the terminology of the Agreement on the Application of Sanitary and Phytosanitary Measures (the SPS Agreement) of the World Trade Organization (WTO).

In the months before the 72nd General Session of OIE in May 2004, Member Countries have been considering proposals regarding the new criteria for including a disease in the single list. The criteria have been kept to a minimum. The primary criterion for a disease to be listed is its potential for international spread. Factors such as zoonotic potential and morbidity and mortality within naive populations are also incorporated.

Under the proposed new notification system, all events of epidemiological significance (not just listed diseases) must be notified immediately to OIE. The intention of the changes is to improve the efficiency of OIE's early warning system for the benefit of the international community.

The new criteria will be considered for adoption at the General Session in May 2004. Following adoption, a new list of diseases will be developed based on the new criteria. The new list will be considered for adoption in May 2005. Until the new list is adopted, the single list will comprise the current Lists A and B combined.

In conjunction with the development of new notification criteria, OIE has conducted a review of its animal health information system. It has asked for Member Countries' views on such things as frequency of reporting, nature of the information being collected and the usefulness of on-line reporting.

Contributed by: Jill Mortier, OCVO, DAFF

Transmissible Spongiform Encephalopathies Freedom Assurance Program

Australia began the Transmissible Spongiform Encephalopathies Freedom Assurance Program (TSEFAP) on 1 January 2004. Funded by industry and governments, it aims to enhance market confidence that Australian animals and animal products are free from TSEs through the structured and nationally integrated management of animal-related TSE activities.

This will be achieved by encapsulating all existing and planned TSE-related activities within one program, including:

- active TSE surveillance
- ruminant feeding restrictions, including audit, feed sampling and testing
- imported ruminant surveillance, including buy-back schemes for targeted cattle
- surveillance and management of designated imported zoo animals
- communications, including the production of advisory material
- research and development, including validation, adoption and technology transfer of diagnostic tests.

A National Advisory Committee, made up of relevant stakeholders, oversees TSEFAP. There are also a number of subcommittees, responsible for a range of technical issues. TSEFAP is managed by Animal Health Australia.

The initial priorities for the TSEFAP are to:

- review Australia's TSE surveillance capabilities, including the implementation of additional surveillance
- review the feedban audits to ensure compliance with current requirements
- manage cattle imported from the United States
- develop a consolidated communications strategy.

All industry and government stakeholders in TSEFAP have identified the importance of the Program to ensure consistency of management of all TSE-related activities and to maintain Australia's favourable status for TSEs.

Contributed by: Simon Winter, Animal Health Australia

Advancing Australia's disease information management

The National Information Managers Technical Group (NIMTG) was formed in late 2002 as a working group under the Primary Industry Health Committee (PIHC), a subcommittee of the Primary Industries Standing Committee (PISC). NIMTG is 'to advance the national animal/plant health information capability by creating an efficient and effective management system for emergency incidents and routine surveillance while enabling national and international reporting requirements to assist in maintaining market access'.

NIMTG is chaired by NSW Agriculture and membership includes all State and Territory departments of agriculture, the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF), Australian Bureau of Statistics (ABS), Commonwealth Scientific and Industrial Research Organisation (CSIRO), Plant Health Australia (PHA) and Animal Health Australia (AHA). NIMTG operates through regular teleconferences and periodic workshops.

To deliver on its terms of reference, NIMTG has been working on the specification, development and delivery methodology of a new emergency and bio-security information system for animal, plant, and pest incursions.

This process involves four steps:

- find the differences and similarities in component needs (completed)
- develop the requirements for a Surveillance, Quarantine, Control and Recovery (SQCR) software application (due May 2004)
- develop a 'stand-alone' SQCR application for use in emergencies (2004–05)
- implement the independent SQCR or equivalent business rules and data model into each State/ Territory system for national alignment (2005).

In the eighteen months since establishment, NIMTG has completed a process of comparing and ratifying component needs from an emergency and routine perspective, across all jurisdictions. NIMTG appointed an independent consultant to develop the requirements for the software application, as the foundation document for the development of a national solution.

In parallel with the above process NIMTG has recommended that, for use in major incidents, a Resource Management Package (RMP) be purchased as a separate commercially available application. A RMP controls all resources during the incident, including staff, vehicles, equipment, consumables, contractors, and accommodation. A National Expert Panel has been formed and has developed a set of requirements and an evaluation procedure for RMP. On approval from PIHC, the panel will begin a product review. NIMTG will interview recommended RMP product suppliers from technical and SQCR integration perspectives.

The SQCR application will integrate with RMP to form a complete operational solution for a major emergency or bioterrorism incident. It will have the following benefits:

- combines property, people, equipment and consumables management
- delivers restricted area control in emergency incidents and regulatory control for routine management of pests and diseases
- complete data integration, including mapping and other spatial data
- availability of up-to-date management information
- the same application interface for animals, plants, pests and incursion incidents for both routine and emergency use, giving consistency and reducing staff training issues in major incidents
- national information consistency in a major event without the loss of flexibility to deal with jurisdictional differences.
- the foundation of consistent national reporting to NAHIS and equivalent details across plant diseases and incursions
- integration with laboratory, human resources and other applications used within each jurisdiction.

Next steps:

NIMTG expects to make recommendations to the September meeting of PISC through PIHC. Based on its findings, it will include recommendations and cost estimates for progressing a system that will deliver to Australia a leading national information management capability.

Contributed by: Stuart McPherson, NSW Agriculture, and Graeme Garner, OCVO, DAFF

Australian Wildlife Health Network

The Australian Wildlife Health Network (AWHN) receives reports of wildlife incidents and definitive diagnoses of cause of death in wildlife in Australia. AWHN is now responsible for the capture and reporting of data relating to the testing of bats for viral diseases. AWHN appreciates copies of test results, both positive and negative. The Network appreciates and acknowledges the contributions from organisations and individuals that have been received. All contributions are recorded in the AWHN database, with details about selected incidents provided here.

The Network has formed the Australian Bat Lyssavirus (ABL) focus group. This is a small, informal group that will act as a forum for discussion of human and animal health issues associated with ABL and rabies in the region, and ABL in Australia. The group is particularly interested in identifying areas for research on ABL and rabies.

The Network is distributing weekly bulletins to members of the Association of Avian Veterinarians, Birds Australia, wildlife carer groups, and the Network, advising them of the world avian influenza situation, with particular reference to matters relating to wild birds.

FREE RANGING WILD ANIMALS—BIRDS

Deaths of 12 tawny frogmouths (*Podargus strigoides*) that occurred in the northern suburbs of Sydney during March are currently being investigated. *Angiostrongylus cantonensis* was isolated from the brains of four individuals. *A. cantonensis* (rat lungworm) is a nematode parasite with a wide spectrum of snails and semi-slugs as intermediate hosts. Consumption of infected snails can result in parasitic meningitis in a variety of animals (and humans).

FREE RANGING WILD ANIMALS—OTHER

Mortalities of threadfin leatherjacket fish (*Artrolepsi filicauda*), off Fraser Island, Queensland were reported to have occurred over two weeks in late March. An estimated two million fish were washed up along the east coast of Fraser Island. The cause of death is currently under investigation. A similar incident was reported at the same time last year involving 400 000 fish, but the cause of death in that event remains unknown — see *AHSQ* Vol. 8, No. 1.

Deaths of eastern grey kangaroos (*Macropus giganteus*) and red-necked wallabies (*Macropus rufogriseus*) at Great Lakes (north of Newcastle), New South Wales that were reported in *AHSQ* Vol. 8 No. 4 are now believed to be associated with a yet-to-be-identified *Omnibacteria* sp.

BAT VIRAL DISEASES

Summary data of bat viral disease testing throughout Australia for the January–March quarter are presented in the table below. Seven animals were submitted for testing for Australian bat lyssavirus, with one positive. The Network has not received any reports of bat viral disease testing in any of the other jurisdictions, or for any of the other bat viral diseases (Hendra, Menangle, Nipah viruses).

Contributed by: Chris Bunn, OCVO, DAFF, and Rupert Woods, Australian Wildlife Health Network

Results of testing for bat viral diseases

DISEASE SPECIES	STATE	CATEGORY	NUMBER TESTED	FINDINGS
Australian bat lyssavirus				
Black flying-fox (*Pteropus alecto*)	NSW	2	1	positive[a,b,c,d]
Grey-headed flying-fox (Pteropus policephalus)	NSW	3	3	negative[a,b,c,d]
	NSW	2	1	negative[a,c,d,e]
Not stated	NSW	2	1	negative[a,c]
	NSW	3	1	negative[a,b,c,e]

KEY to category:

1: routine submission (no suspicion of exotic or other emergency disease)
2: submission for exclusion of exotic or other emergency disease (remote likelihood of presence)
3: submission for confirmation of exotic or other emergency disease (high likelihood of presence)

Tested for Australian bat lyssavirus by: [a]fluorescent antibody test; [b]Taqman® assay specific polymerase chain reaction test for pteroid ABL on brain homogenate; [c]immunohistochemistry (immunoperoxidase test for lyssavirus); [d]isolation of virus; [e]histopathology on brain.

Aquatic animal health

EXERCISE ACHERON

Exercise Acheron, an aquatic animal disease simulation exercise involving the Government of Western Australia (WA) Department of Fisheries and the marron industry, was conducted on 10–11 February. The exercise examined the ability to respond to an outbreak of the exotic fungus *Aphanomyces astaci*, which causes crayfish plague. Crayfish plague can cause almost 100% mortality in both farmed and wild populations of susceptible crayfish species. The Western Australian marron industry exports a significant percentage of its production, but this export depends on the provision of health certification stating that the product is free of crayfish plague. Loss of the export trade would place significant pressure on the industry and downward pressure on the market price of marron.

Exercise Acheron was designed to build on the previous emergency disease simulation exercise conducted in WA in October 2002 by providing training in emergency management to a wider group of Department of Fisheries staff, and to members of the marron industry. The aim of Exercise Acheron was to increase capacity within the Department of Fisheries and the WA crayfish industry to manage emergency disease incidents. Evaluation of the outcomes of the exercise and jurisdictional performance and debriefing showed that although there is a good general awareness of emergency disease management procedures, and a good knowledge of the Department of Fisheries Emergency/Incident Plan, there are opportunities for improvement or development of existing systems. The evaluation report makes recommendations to improve existing frameworks and resources to develop more robust procedures for managing the response to an emergency disease incident.

INFECTIOUS HAEMATOPOIETIC AND HYPODERMAL NECROSIS VIRUS IN AUSTRALIA

Advances in diagnostic technology have allowed the identification of a virus that caused mortalities in the Australian prawn farming industry in the early 1990s. Although the observed histopathology and viral structure were consistent with the presence of infectious haematopoietic and hypodermal necrosis virus (IHHNV), the samples tested negative for IHHNV with the IHHNV primer set 77012F/77353R published in the OIE *Manual of Diagnostic Tests for Aquatic Animals* (4th ed., 2003). In recent years, characterisation of IHHNV isolates from across the Indian and Pacific oceans have revealed a family of RNA viruses with as much as 14% sequence difference between isolates. A new set of PCR primers was developed and archived samples of the Australian virus tested positive using these primers. Subsequent sequencing of the PCR fragment revealed that the Australian virus was IHHNV, and was most closely related to isolates from Madagascar.

In addition, individual prawn (*Penaeus monodon*) broodstock used in a research program, and prawns bred from these broodstock (originating from Queensland), yielded positive PCR results when tested with the new primer sets. None of these prawns had clinical signs of IHHN or histological lesions indicating IHHNV infection, and none reacted with the OIE-recommended PCR test. The results were reported to OIE.

AQUATIC ANIMAL HEALTH STRATEGY 2005–10

For the past five years, the development of aquatic animal health programs in Australia has been guided by AQUAPLAN—Australia's National Strategic Plan for Aquatic Animal Health 1998–2003. In the 2000–01 budget, the Australian Government provided additional funding through the *Building a National Approach to Animal and Plant Health* initiative. These monies supported approximately 50 projects and delivered outputs such as AQUAVETPLAN manuals, Standard Diagnostic Techniques, and disease simulation and other training exercises.

With AQUAPLAN drawing to a close at the end of 2003, and the *Building a National Approach to Animal and Plant Health* initiative also approaching the end of its lifespan (June 2004), there was wide recognition that AQUAPLAN has delivered significant benefits to the industry, and that this integrated approach must continue for Australia to remain competitive.

Between June 2003 and February 2004, the Office of the Chief Veterinary Officer has supported three foresighting workshops that identified government (both Commonwealth and State/Territory) and industry priorities on health issues that will face the aquaculture industry over the next years. The Aquatic Animal Health Strategy 2005–10 includes eight key strategies identified at the workshops. These are:

- surveillance, monitoring and reporting
- harmonisation of approach within Australia and internationally
- cost-sharing arrangements
- research into immunology for drug replacement and drug alternatives
- human resources/education
- animal welfare
- addressing the knowledge gaps associated with the

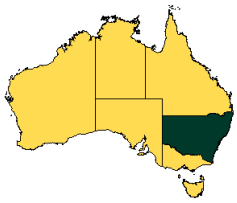
health status and disease concerns of new aquaculture species
- health interactions between aquatic animals and the broader environment.

The new Aquatic Animal Health Strategy 2005–10 seeks to enhance the management of aquatic animal health in Australia through the development, adoption and implementation of programs, policies and codes of practice related to key aspects of aquatic animal health. The Strategy is currently being developed under the overview of the Office of the Chief Veterinary Officer. The process involves extensive consultation with Australian Government Departments; State and Territory Government Departments; and the aquaculture industry (including wild catch, the recreational fishing industry and conservation bodies); it is supported with funds available under the Aquaculture Industry Action Agenda. The Strategy will include a clear allocation of roles and responsibilities and indicative costings of the work to be undertaken. It will be submitted through the Aquatic Animal Health Committee for endorsement by Primary Industries Standing Committee and Primary Industries Ministerial Council in September 2004.

Contributed by: Iain East, OCVO, DAFF

State and Territory reports

New South Wales



Contributed by:
Barbara Moloney
NSW Agriculture

ANTHRAX

Three positive anthrax investigations were reported during the quarter. All involved beef cattle and the three properties were located in the known anthrax endemic area. The first incident occurred in the Hillston district in late January. Three of 60 steers were found dead in a barley stubble paddock. Two sheep from the same paddock were subsequently found dead, presumed also to be anthrax. The second incident occurred in the Condobolin district, also in late January, and involved the death of one of 17 cows. The third incident occurred in the Forbes district in early February, and resulted in the death of 10 of 92 adult cows.

All properties were placed in quarantine, affected carcases were burned and/or buried, and all in-contact animals were vaccinated against anthrax.

Eighteen investigations during the quarter excluded anthrax as the cause of death. Eleven of these were in beef cattle. Alternate diagnoses for two investigations were green cestrum (*Cestrum parqui*) toxicity, and lead poisoning. Six investigations were in sheep, and the remaining one in pigs. No alternative diagnoses were determined for these species.

HENDRA VIRUS EXCLUSION

In January, two of three ponies on agistment near Newcastle showed respiratory distress. Another pony had died one month previously. Samples were taken from the most severely affected animal, which was later euthanased. No Hendra virus was isolated from tracheal washings from this animal. Investigation of the agistment paddock revealed significant Crofton weed (*Eupatorium adenophorum)* infestation. Clinical and post mortem examination findings in these ponies are consistent with Crofton weed toxicity, which can present with signs and gross lesions that are similar to those seen with Hendra viral infection. The surviving pony was removed from the infested paddock.

STRANGLES

Strangles infection was confirmed in seven horses from late January to early February. None of these cases were from properties that were likely to export horses. A further three cases were reported in March.

PHALARIS TOXICITY IN CATTLE

A dry period followed by 35 mm rain in late January resulted in rapid regrowth of a pure phalaris pasture on a property at Cassilis. Twenty-nine out of 60 Friesian heifers died after two to three days exposure to fresh growth. Post mortem examination of tissues from affected animals showed cerebral grey matter changes consistent with phalaris polioencephalomalacia-like sudden death.

INFECTIOUS LARYNGOTRACHEITIS

A broiler flock in the Cumberland area was confirmed with infectious laryngotracheitis (ILT) in January. The birds were approximately 30 days of age. Mortality was reduced after vaccination against ILT. The farm had had several episodes of ILT in the last few years. DNA fingerprinting indicated that the virus involved in the outbreak was not of vaccine origin, although it was similar to the vaccine virus.

CHLAMYDIOSIS

A breeder chicken flock diagnosed with chlamydiosis and reported in the NSW State report last quarter

(*AHSQ*, Vol. 8, No. 4) remained positive on conjunctival and splenic smears, despite extended high level treatments with chlortetracycline and erythromycin. The flock was depopulated, and carcases were sent for rendering.

Four separate cases of human chlamydiosis were associated with a pet shop in the Hunter district. Birds in the shop were euthanised and, subsequent to refurbishment and development of a management plan, restocking was allowed.

HEAT STRESS MORTALITIES IN POULTRY

High mortalities of up to 30% were reported during February and attributed to a combination of heat wave and power failure. This was experienced on seven poultry farms in NSW, all in one week. Six of the seven were in one geographical area. Avian influenza was excluded following veterinary and laboratory investigations.

EGG DROP SYNDROME 76

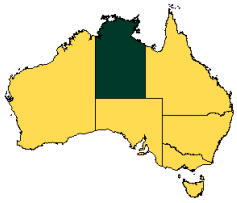
Two cases of egg drop syndrome (EDS76) were notified. One was in a 65-week-old layer flock, and another case involved old breeders with suboptimal production and high haemagglutinating adenovirus antibody levels. The layer flock experienced an egg drop, and increase number of eggs with soft shells. Both properties were located on the central coast region of NSW.

PORCINE MYOCARDITIS

Porcine myocarditis (PMC) is a newly reported disease causing stillbirths, mortality and general malaise in pre-weaning piglets (*AHSQ*, Vol 8, Nos. 3 and 4). Initially, PMC was associated with losses of up to 50% due to stillbirths and pre-weaning mortalities. Production indices at the affected piggeries are now nearly back to normal. Investigations into the syndrome are continuing, with a view to understanding the cause and reproducing the disease experimentally.

Northern Territory

Contributed by:
Dick Morton
DBIRD



WALKABOUT DISEASE IN HORSES

One horse died and several others were reported ill on stations in the Katherine area. Clinical signs included aimless wandering, mild abdominal pain and recumbency. Post mortem examination revealed congestion of liver and kidney, and laboratory results were consistent with chronic liver damage caused by pyrrolizidine alkaloid poisoning.

Twelve stock horses were screened for liver damage using gamma glutamyltransferase (GGT) as the indicator. Six had high GGT levels indicating chronic liver damage.

Six *Crotalaria* species (*C. crispata, C. montana, C. brevis, C. medicaginea, C. novae-hollandiae* and *C. medic*) and Birdsville indigo (*Indigofera linneae*) were identified on properties as potentially toxic plants.

LEAD POISONING CATTLE.

Three weaners showed progressive blindness, teeth grinding and fitting over three days, with two dying. The third animal was euthanised. A chewed battery was found and removed from the paddock, and no further problems were reported.

SWINE POX AND CONCURRENT MELIOIDOSIS

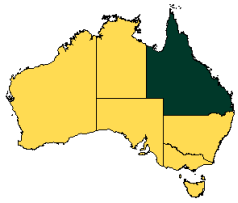
A private veterinary clinic reported a case of unusual skin lesions and serious illness in backyard pigs in the Darwin rural area. One pig had died. The remaining affected pigs were depressed, feverish, and had crater-like lesions consistent with swine pox over the face, ears, legs and concentrated on the belly. One pig had an enlarged abscessed inguinal lymph node. Skin biopsies and blood samples were collected to confirm the diagnosis of swine pox and concurrent infection with *Burkholderia pseudomallei*. The owner was advised to destroy the infected pigs.

BOTULISM IN POULTRY

Following media coverage of avian influenza in Asia there was a burst of reports from concerned poultry owners in the Darwin area. A number of cases with mortality and morbidity were investigated and botulism was diagnosed. Of particular interest was an investigation of deaths in chickens and guineafowl exhibiting classical signs of botulism, including paralysis. The owner had fed maggots from a dead goanna the day before the onset of clinical signs.

Queensland

Contributed by:
David Pitt
QDPI



PLANT POISONING

There were three reports from the Cunnamulla to Longreach region of sheep with fever and ataxia, followed by recumbency and (in some cases) death. In one flock of 3000 sheep, 50 died and 20 more were affected. Histology showed mild myelin degeneration in the spinal cord. This is consistent with 'humpyback' and may have been caused by consumption of *Solanum esuriale* (quena).

A 10-year-old gelding from a Forsayth property in north Queensland had been in poor health for over a month. It was emaciated, weak, and mildly dehydrated, and was sweating and staggering. It had pale mucous membranes. Equine infectious anaemia was excluded by serology. 'Walkabout' disease likely due to ingestion of *Crotaria* spp. was suspected, and post mortem examination and histopathology findings were consistent with pyrrolizidine alkaloid toxicity.

Two cases of oxalate poisoning were reported in sheep in the Tambo Shire. In both cases, the sheep had been mustered for shearing. In one flock, 1000 were at risk with 30 deaths and 4 sick. The other flock had 20 dead and 20 sick from 750 at risk. Animals were either found dead, or showed a range of clinical signs including incoordination, high-stepping gait, high head carriage, and bright red mucous membranes that turned blue just prior to death. Pigweed found in one case had been heavily grazed. Biochemistry showed hypocalcaemia, and elevated urea and creatinine. Histological examination of the kidneys in both cases revealed the presence of numerous crystals, shown to be oxalate under polarized light. *Portulaca* spp. was obtained from the rumen contents in one case.

BOVINE EPHEMERAL FEVER

With seasonal rainfall in western Queensland, there has been an increase in inquiries from farmers, particularly in the south-west area, about cattle showing clinical signs consistent with bovine ephemeral fever (BEF). Evidence of seroconversion is generally used to confirm the diagnosis, but several cases in the Darling Downs region were confirmed using the polymerase chain reaction (PCR) test.

LEPTOSPIRAL ABORTION IN BRAHMAN COWS

Two heifers and one cow carrying 'embryo transfer' calves aborted in one week. All were due to calve in about three weeks and had been vaccinated for leptospirosis. Serum and a range of fresh and fixed tissues from a foetus were submitted to the Toowoomba Veterinary Laboratory. Antibodies to *L. hardjo* were found in the pleural fluid, and the liver had a mild, multifocal, fibrinous hepatitis.

BOTULISM

On a Livingstone Shire property in central Queensland, 38 of 240 heifers in one paddock died, with up to 10 more showing signs of weakness and difficulty in walking. There was reluctance to drink and tongue paralysis. Animals eventually became recumbent. Seven of 120 steers in another paddock also showed clinical signs. Most affected animals were euthanised. Botulinum toxin (C/D) was detected by enzyme-linked immunosorbent assay (ELISA) from one of three animals that had post mortem examinations. The property was known to be extremely deficient in phosphorus, and animals were receiving phosphorus supplementation. The cattle were in excellent condition and there had been significant rain with ample feed in the paddocks. The animals were all vaccinated according to label directions with a bivalent botulinum vaccine last year, and the deaths occurred immediately after an annual booster. Surviving animals were subsequently revaccinated twice after the outbreak began and losses ceased about four weeks later.

Botulism was the likely cause of the deaths of 16 of 24 ducks on a property south of Brisbane. Stomach contents tested positive by ELISA for *Clostridium botulinum* toxin. The deaths occurred about the time of a fish kill in the dam. Blue–green algae were identified in a water sample from the dam. However, there was no evidence that blue–green algae were involved in the death of the ducks, as no lesions of toxic hepatitis were seen. The cause of death of the fish was not determined, but may have been due to high water temperatures. Ducks can get botulism from eating rotting fish or maggots that feed on the fish.

PESTIVIRUS

Pestivirus was diagnosed as the cause of abortions in six of 50 cows on a Belyando Shire property in central Queensland. Bovine pestivirus was detected in foetal blood from one foetus using the PCR test.

A McKinlay Shire property in north-west Queensland had 20-month-old homebred cattle with high pestivirus serum neutralisation test titres. Eight animals were tested, and all were positive. These animals had been sampled to indicate herd status after other older siblings had abnormal calves.

VIRAL ENCEPHALITIS

A 3-year-old steer presented for slaughter from a Banana Shire property in central Queensland showed severe tremor and ataxia, with difficulty in standing. It was sampled as part of the National Transmissible Spongiform Encephalopathies Surveillance Program (NTSESP). It had marked non-suppurative encephalitis in the brain stem and Wallerian degeneration of the spinal cord. Histopathology suggested a viral aetiology. The animal was negative for bovine spongiform encephalopathy. The owner of the property reported having up to two cases of the syndrome annually in cattle of all ages. This animal had been observed to be ataxic about two weeks previously. Similar cases have been identified occasionally in Queensland.

GOAT DISEASES

On a property in the Banana Shire in central Queensland, 20 of 100 goats had signs of ill thrift and diarrhoea. Faecal samples had high strongyle and

coccidial egg counts. *Haemonchus contortus* was responsible for the deaths of 7 of 200 goats near Laidley in south-east Queensland, and a Thuringowa property in north Queensland had homebred 8-month-old Boer goats that were diagnosed with helminth infestation.

Twenty of 200 goats from Dayboro Shire in south east Queensland were diagnosed with caseous lymphadenitis after *Corynebacterium pseudotuberculosis (ovis)* was cultured from lumps around the head and neck that contained greenish-yellow pus.

A 10-month-old goat from Bundaberg died after showing clinical signs of anorexia and lethargy. At post mortem examination, it was found to have cardiomyopathy of undetermined cause. The liver showed moderate to severe fatty changes with haemorrhagic necrosis that was considered to be secondary to the heart damage. Possible aetiologies for the heart lesions were nutritional (selenium - vitamin E deficiency) and plant poisoning by cardiac glycoside-containing plants.

Dermatophilus congolensis was isolated from samples taken from a goat with a skin problem in the coastal Mackay Shire.

HAEMONCHOSIS IN SHEEP

Cases of sudden death in sheep were reported in southern Queensland. The carcases of these animals have been noticeably pale. Faecal egg counts and examination of the intestinal tract revealed high numbers of *Haemonchus contortus*.

POISONINGS

A newly introduced pig in a southern Queensland piggery was found paddling. Post mortem examination revealed mild, patchy discolouration of the lungs and cloudy cerebrospinal fluid. Histological examination of the lungs showed a mild, multifocal, interstitial pneumonia and pulmonary oedema. The cerebrum showed locally extensive areas of malacia with neuronal necrosis, swollen endothelium, astrocytosis and eosinophilic perivascular cuffing, which is pathognomonic for salt poisoning.

Lead poisoning caused the deaths of three crossbred cows at Kilkivan Shire in south-east Queensland. Presenting signs included diarrhoea and death. Kidney samples contained 40.3 mg/kg fresh weight (FW) lead, and liver contained 11.9 mg/kg FW lead. The source of the lead is unknown.

On a property near Croydon in north Queensland, 32 of 130 Brahman steers died, and 2 more were sick. The cattle were between one and two years old, and had blindness, hyperaesthesia, stumbling and shivering. At post mortem examination, lead was found in the ventral aspects of the rumen contents and reticulum. Lead levels of 25 and 68 mg/kg FW of liver were detected. A car battery was found in the paddock.

At least 6 of 100 ten-month-old introduced Brahman cattle that had uncoordinated hind legs and depression died on a Mareeba Shire property. Post mortem examination showed a bronze liver and congested abomasum. The animals had been observed around an old dip site, and the gut contents matched soil around the dip. The area was phosphorus deficient, but supplementation had not been provided. Botulism, babesiosis and anaplasmosis were excluded based on laboratory results, but arsenic levels were 7 mg/kg FW in liver.

Copper poisoning and concomitant helminthiasis caused anorexia, haemoglobinuria and anaemia in one male fibre goat out of 30 at risk in the Gatton Shire. Serum contained 2295 ug/L copper. Pellets fed to the goats were the suspected source of the copper.

MELIOIDOSIS IN ALPACAS AND GOATS

Melioidosis due to *Burkholderia pseudomallei* was responsible for the death of an alpaca from a property in south-east Queensland. Post mortem examination revealed multiple abscesses in many lymph nodes and in the laryngeal mucosa. A large abscess in the larynx ruptured into the airway. The lungs were congested with stable foam in the trachea. A complement fixation test (CFT) was positive for *Burkholderia pseudomallei* and the organism was isolated from an abscess and the lung. The property has since lost 11 more alpacas this quarter. The detection of melioidosis in livestock is an unusual occurrence in south-east Queensland. Recent heavy rains may have predisposed the animals to infection by relocating the bacteria from deeper to more superficial layers of the soil. In addition, alpaca may be highly susceptible to this organism. The death due to meliodosis of an alpaca brought to Darwin has been reported in the literature.

Three of 30 mixed sex goats in dry melaleuca country near Proserpine in northern Queensland died, and three were sick. They had never been either vaccinated or wormed. Some were weak and were coughing. They had reduced appetites, and one nanny aborted. Blood samples were tested by CFT for melioidosis and three of five samples were positive.

WILDLIFE

Bridled nailtail wallabies from a 60 hectare captive breeding enclosure in central Queensland were relocated to Rockhampton. They had heavy burdens of *Trombiculid* sp. mites, *Amblyomma triguttatum* ticks, and strongyles in intestinal contents. Affected animals had signs of depression, ill thrift, and corneal opacity.

South Australia

Contributed by:
John Weaver
PIRSA

ROOSTER DEATHS ASSOCIATED WITH SUBCUTANEOUS AND VISCERAL BLEEDING.

A 35-week-old breeder flock at Gawler River was investigated for a syndrome reported in male birds (roosters) only, with mortality approaching 10% over four days.

Individual birds were depressed and died within hours of first being noticed. The combs were pale. The manager had autopsied a few birds and saw small focal haemorrhages on the intestines and although suspecting coccidiosis said 'it doesn't look right'.

In the set of six birds submitted, there was little to see on post mortem examination, although one had extensive areas of subcutaneous bleeding and another had a grossly enlarged spleen. A heavy growth of *Staphylococcus aureus* and a moderate growth of *Pseudomonas* were cultured from the lung and multiple foci of Gram-positive cocci were seen histologically in the spleen.

A farm visit was made and eight birds autopsied. There were no consistent findings, but two birds had blood in the anterior eye chamber, others had small patches of hyperaemia and bleeding visible on the internal skin (but not externally) and one bird had subcutaneous bleeding, covering most of the breast muscle area. Two were also noted to have blood-stained fluid in the duodenum, another had had a swollen wattle, and another two had small white focal lesions in the liver.

An examination of the mortality chart revealed that, beginning a week before the males, female mortality rate had gone up and was running at about 5–9 per day in a flock of 7000, whereas male mortality had gone up to 40–50 per day. With males placed at about 10%, this was a death rate 3–4 times that of the females.

Considering the liver lesions, apparent vascular damage and the swollen wattle, fowl cholera was suspected, but *Pasteurella multocida* was not cultured from any tissues. Water medication with amoxicillin was initiated, and male mortality ceased over several days although female levels remained slightly above normal.

UNUSUAL NEUROLOGICAL SYNDROME IN AN ANGUS HEIFER

A 9-month-old Angus heifer, on a property near Murray Bridge, had a week-long history of extreme aggression and excitement, which involved running through fences, attempting to jump out of cattle yards and charging. During this time she was reluctant to eat or drink and was frothing at the mouth. Several days after the onset of the unusual behaviour, her eyes developed a white 'film' and she appeared to be blind.

On examination, the heifer was drooling from the mouth and was extremely agitated. There were numerous external wounds, apparently caused by self-inflicted trauma. The eyes were white, and one eye was partly ruptured with protrusion of the iris. There was no discharge from the eyes.

The heifer was euthanised. On gross examination, there were numerous superficial erosions and ulcerations present on the gums. The abdominal and thoracic organs appeared normal. The brain was extremely soft and friable, but there was no gross thickening or inflammation of the meninges. The eyes had a diffuse white change affecting the cornea.

The differential diagnoses included bovine malignant catarrhal fever (MCF), bacterial or viral encephalitis, mucosal disease, and toxicoses.

No significant organisms were cultured from the tissue samples. No histological abnormalities were present in the brain, liver, lung, kidney, eyes or optic nerve. Biochemical analysis revealed elevated globulins and there was a mild stress or inflammatory leucogram. Despite being only nine months old, the animal was tested for BSE with a negative result. The heifer tested negative for infectious bovine rhinotracheitis and bovine viral diarrhoea virus by ELISA. Testing for MCF by PCR was also negative. Kidney and liver samples were tested for lead levels, which were within the low normal range. Tests for rabies and Australian bat lyssaviral infection were negative. Despite these extensive laboratory tests, a diagnosis has not yet been established.

LUPINOSIS ON LOWER EYRE PENINSULA

A producer with a mob of 250 young ewes on the Lower Eyre Peninsula reported finding at least two dead sheep every morning for a week. The sheep were in good condition and were in a paddock with good feed. As the sheep had not been vaccinated against enterotoxaemia as young lambs, and as there was no ewe vaccination program, enterotoxaemia was considered the most likely cause of the deaths. Enterotoxaemia commonly kills sheep on the Eyre Peninsula. However, further investigation was required, as the reported signs were not consistent with this diagnosis. Some sheep were repeatedly getting caught in fences and a number of sheep were lethargic and disorientated, with the mob proving very difficult to move (clinical signs suggestive of hepatic encephalopathy). Post mortem examination of two sheep revealed generalised jaundice, with a fatty,

icteric liver. Lupinosis was diagnosed, as the sheep had been on lupin stubbles for a number of weeks. The sheep were removed from the affected paddock, but deaths continued for several weeks. Recovered sheep that were later slaughtered had a high condemnation rate owing to jaundice. Other sheep producers in the district have had similar experiences with lamb losses and abattoir condemnations.

The lupin variety in these cases was 'Wonga' (*Lupinus angustifolius*), which is said to be moderately resistant to *Phomopsis* spp. As this has not been a wet summer, it is not clear why lupinosis has been a problem. Agronomists have noticed that *Phomopsis* spp. was prevalent in some stubbles this year. Lupinosis was well-known in this area 20 years ago, but has been uncommon in recent years, so came as a surprise to the farmers concerned.

CALTROP TOXICITY IN PORT GERMEIN AREA

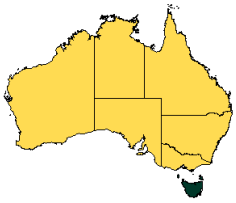
A visit was made to a property in the Port Germein area in January. Approximately 100 lambs (August–September 2003 drop) had been grazing on a paddock with low levels of feed. About 50% of the remaining available feed was caltrop (*Tribulus terrestris*), which would have germinated in November–December 2004. Clinical signs included photosensitivity with facial swelling and ocular-nasal discharges, as well as severe generalised icterus, especially noticeable in the groin area. Some neurological signs were evident, with intermittent head tilting in some lambs. Other lambs were jaundiced with no other abnormal signs. Blood and post mortem examination revealed a hepatobiliary disease with concurrent obstructive icterus. Caltrop toxicity was diagnosed on the basis of histopathology.

SCOURS IN DAIRY CALVES

A number of producers in the Adelaide Hills have been experiencing severe ongoing problems with calf scours. In the worst cases, mortality has reached 20% and morbidity at times approaches 100%. Private veterinarians have investigated a number of these outbreaks, but no clear aetiology has been identified. Heavy growth of non-haemolytic *Escherichia coli* is often reported with multiple antibiotic resistance. Cases will often respond partially to appropriate antibiotic therapy.

An intensive investigation is underway on one property. Stockmanship and farm hygiene appear good. Colostrum intake is monitored and immunoglobulin levels are high. A single cause has not been identified. Nineteen calves were tested with the following findings (number of calves): rotavirus (2), coronavirus (17), cryptosporidia (7), coccidia (5) and non-haemolytic *E. coli* (3). Investigations are continuing.

Tasmania



Contributed by:
John Elliott
DPIWE, Tasmania

UPDATED LABORATORY INFORMATION MANAGEMENT SYSTEM

Two years ago, the Mt Pleasant Animal Health Laboratory changed its laboratory information management system. The new system records details of examinations and results in a format that facilitates data handling and analysis. The ability to track trends in reasons for laboratory examinations (and associated results) has been enhanced. Occasional reports that discuss such trends will be submitted to future issues of the *AHSQ*.

TUBERCULOSIS REACTOR

A heifer tested prior to export to China reacted to bovine tuberculin in a comparative intradermal test using the caudal folds. The owner was ordered to slaughter this animal. This was done at a domestic abattoir. Lymph nodes were collected for laboratory examination according to the requirements of the Tuberculosis Freedom Assurance Program 2 (TFAP2). Slaughter and specimen collection were supervised. The specimens were submitted to Mt Pleasant Laboratories. Tuberculosis was not detected.

NEWCASTLE DISEASE EXCLUSION

A practitioner reported that nine of 25 bantams had developed central nervous system signs overnight. The 25 bantams were kept in four pens. All nine were in one pen. They had been let out to forage the day before and had had access to fallen fruit. Three live birds were submitted for laboratory examination. One bird had died by the time they were examined but the other two were almost recovered. The only significant finding was cerebral oedema in two of the three birds. There was no evidence of inflammation in any of the brains, ruling out Newcastle disease. A toxin that was quickly metabolised or excreted seems the most likely cause. As the birds may have had access to fermented fruit, alcohol poisoning was considered. Samples were submitted to the State Forensic Laboratory but tests were negative.

SCURVY

Six of 20 guinea pigs died over a week. Signs included bloody diarrhoea, salivation and convulsions. All affected animals had been kept inside. Bilateral pneumonia, sub-mandibular abscesses and sub-cutaneous inguinal haemorrhages were found at post mortem examination. Poor ventilation could have predisposed the guinea pigs to pneumonia. The

abscesses and subcutaneous haemorrhage are suggestive of vitamin C deficiency. Guinea pigs depend on a regular daily intake of Vitamin C. These animals had been fed on horse pellets, which may have compromised their vitamin C status.

LUMPY JAW IN FREE-LIVING MACROPODS

Three animals in a population of Bennett's wallabies developed suspected lumpy jaw. The animals were free-living but received some supplementary feeding. One animal, a 15-month-old male, was examined. It was in very poor condition, weighed 3 kg, and had a large fluctuant abscess on the left side of its face. Destruction of bone involved the maxilla, orbit, skull and tympanic bulla on the left side of the face. Lumpy jaw in macropods has a multifactorial aetiology. *Dichelobacter nodosus* is likely to be the causative organism. Overcrowding and faecal contamination around feeding stations are contributory factors. Carbohydrate in supplementary foods can predispose to gingivitis. The inflamed gums are then more susceptible to damage from grasses and sharp awns. The supplementary feed given to these wallabies was a complete horse meal. Samples of this meal contained many sharp awns and chaff.

CHRONIC ANTIGENIC STIMULATION

A number of deaths were reported in a flock of sheep used for the production of biologicals. Conditions found on post mortem examination were glomerulonephritis, periportal hepatitis and obstructive pulmonary disease. These histological changes are typical of chronic antigenic stimulation due to the procedures used in the production of biologicals.

PHOSPHORUS DEFICIENCY

Hypophosphataemia was seen in two cattle herds in northern Tasmania. On one property, 20 of 300 animals were affected. These animals were 3–4 years old, with calves at foot, and had been losing weight rapidly. They had been running on hilly country. A similar syndrome had been seen on this run in previous years.

LABORATORY ACCESSIONS AND NOTIFIABLE DISEASES

During the quarter, there were 91 aquaculture accessions, 453 livestock accessions, 43 companion animal accessions, 51 wildlife accessions and 3 accessions from other sources.

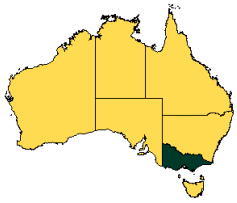
The following investigations into possible cases of notifiable diseases were undertaken during the quarter:

Disease	Investigations	
	+ve	No.
American Foulbrood	3	4
Anthrax	0	9
Avian influenza	0	2
Avian psittacosis	0	1
Bacterial kidney disease	0	57
Bovine tuberculosis	0	1
Brucella abortus (bovine brucellosis)	0	13
Brucella ovis	0	13
Brucella suis (porcine brucellosis)	0	1
Clinical salmonellosis	7	58
Contagious agalactia	0	2
Enzootic bovine leucosis	0	5
Hydatids	0	3
Johne's disease	9	67
Leptospira hardjo	0	11
Leptospira pomona	1	11
Listeria	2	3
Negative finfish bacteriology*	0	55
Perkinsosis of shellfish	0	1
Piscirickettsiosis	0	1
Salmonella Pullorum	0	2
Q fever	0	2
Salmonella Abortusequi	0	1
Salmonella Abortusovis	0	11
Salmonella Enteritidis	0	4
Transmissable spongiform encepha-lopathy	0	3
Verotoxic *Escherichia coli*	0	46

* *Aeromonas salmonicida* subsp. *salmonicida*, goldfish ulcer disease, streptococcosis of salmonids, marine aeromonad disease

Victoria

Contributed by:
Tristan Jubb
DPI, Victoria



FOWL POX

In a small free-range flock, chickens near Geelong in south-west Victoria, five of 15 died after exhibiting respiratory distress with gasping, and nasal and ocular discharges. At post mortem examination, the trachea had pin-point haemorrhages and clumps of mucus adhering to the mucosa. A yellow diphtheritic membrane was seen in the buccal cavity. Virions morphologically consistent with avipoxvirus were seen on electron-microscopic examination. This result was confirmed by chorioallantoic membrane (CAM) inoculation of 10-day-old chicken embryos, which developed round yellow plaques consistent with pox lesions. Histopathological lesions were limited to the trachea and the pharynx, in which marked hyperplasia

of the epithelium and hypertrophy and the cells, coupled with mixed cellular reaction, predominantly heterophils, was seen. Eosinophilic intracytoplasmic inclusion bodies were present. Similar lesions were detected in the CAM. No haemagglutinating viruses were cultured. Proliferative stomatitis and tracheitis due to pox virus infection was the final diagnosis. Presence of insects such as mosquitoes in addition to absence of vaccination against fowl pox virus probably contributed to the outbreak.

BOVINE POLYSEROSITIS DUE TO *HISTOPHILUS SOMNI* (*HAEMOPHILUS SOMNUS*)

Several steers, recently introduced to a feedlot near Sunbury in south-west Victoria, exhibited aggressive behaviour, tremors and terminal collapse. Post mortem examination revealed fibrin accumulations in the pericardium, joints, tenosynovial sheaths, brain and spinal meninges, as well as small atelectic areas in the anteroventral lungs. Histologically, there was neutrophil accumulation in bronchioles and various lining membranes. Thrombi occluded liver sinusoids and renal vasa recta, but not brain vessels. *Histophilus somni* was cultured from the lungs and spinal meninges. Chlamydial antigen was not detected.

LAMENESS IN CATTLE

In a beef herd in northern Victoria, seven Angus heifers died and six others were severely lame four weeks after purchase at a cattle sale in southern Victoria. The farmer had purchased three lines of heavily pregnant heifers at the sale, but affected cattle were from only one of the lines. Cattle from this line were more restless and excitable than the other two lines, when purchased, and on farm. Weather conditions were extremely hot over the period. Post mortem examination of two heifers found under-running of the soles of the lateral claws of both hind feet. In one animal, cellulitis had extended up the leg to the thigh muscles. Both heifers were fat, with fatty livers, and were seven months pregnant. The other two unaffected lines of cattle were the same breed and age, and were as fat, and had experienced the same sale, and post sale transport and grazing conditions as the affected line, but were more heavily pregnant. It appears as though nervous temperament may have been the significant risk factor, triggering a sequence of events beginning with traumatic laminitis and ending in pregnancy toxaemia and death for some cattle and debilitating lameness in survivors. The loss incurred by the farmer exceeded $6000.

PHOTOSENSITISATION IN SHEEP

Twenty of 200 crossbred weaners near Rutherglen in north-east Victoria died or were destroyed, and another 20 were sick after becoming severely photosensitised. They had been introduced one week previously to a lush pasture of lucerne and couch grass (*Panicium* spp.). They suffered extensive skin damage to ears, face and perineum, complicated by flystrike and infection. Histological examination of liver samples showed a diffuse, subacute, toxic hepatopathy with bile accumulation. The cause of the photosensitisation is unknown, but hepatotoxic steroidal saponins in the couch grass and phylloerthyrin overload associated with the dietary change to lush green feed may have been involved. The losses were estimated to be over $2500.

AVIAN INFLUENZA EXCLUSIONS IN SICK CHICKENS AND WILD BIRDS IN SUBURBAN MELBOURNE

Illness and deaths in chickens and wild birds in suburban Melbourne backyards prompted three investigations to exclude avian influenza. The first investigation was of an eight-member backyard chicken flock near the Yarra Valley, east of Melbourne, where five of the chickens had died over two weeks. They had signs of diarrhoea with blood, mouth breathing, lethargy and pale combs. One mildly ill surviving chicken was examined post mortem, and found to have a dilated oviduct filled with a large amount of caseous, necrotic material from which was grown a pure culture of *Escherichia coli*. Viral culture and isolation were negative for avian influenza and Newcastle disease. The remaining two birds stayed healthy and continued to lay well. The cause of death in the chickens is unknown, but coliform salpingitis and septicaemia is the most likely diagnosis.

The second investigation was of a backyard chicken flock in east Melbourne, where one chicken died after friends from South-East Asia had visited the owner's house. Concerned about avian influenza, the owner rang the emergency disease hotline. At post mortem examination, an egg was found in the abdominal cavity surrounded by fibrinous adhesions. It was concluded that the bird had died of egg peritonitis. Other birds were healthy. In a nearby suburb, another concerned owner rang the hotline to report that his two recently purchased chickens were showing signs of severe respiratory disease. Post mortem examination showed severe rhinitis, tracheitis and pneumonia. Culture and virus isolation were negative for avian influenza and Newcastle disease, but pure cultures of *Mycoplasma pullorum* were isolated.

In the third investigation, the finding of three dead spotted turtle doves and a magpie in a suburban Melbourne backyard prompted the owner to ring the emergency disease hotline. Dead birds from a wide range of native and introduced species were found in the gardens of houses along one street. Birds submitted for laboratory examination were in good body

condition, and had died with crops full of a commercial birdseed mix that was found to contain a lethal concentration of mevinphos. The sale and use of mevinphos is now tightly controlled in Victoria, but it was once freely used to control insect pests of brassica crops and lucerne. It is highly toxic for birds, and malicious poisoning is suspected.

INFERTILITY IN HEIFERS

In a beef herd in north-east Victoria, 31 of 53 two-year-old heifers were not pregnant after a six-month mating period with four different bulls. On physical examination, one bull was found to have small, soft testicles, but the others were normal. The heifers had small ovaries with little follicular development. Precautionary serological screening was performed for leptospirosis, brucellosis and infectious bovine rhinotracheitis, and results were negative. The heifers had been grazing dry pasture only, for over 12 months, and it was suspected that the long-term low protein diet may have caused the infertility. The loss incurred by the owner exceeded $30 000.

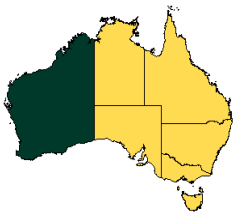
INFERTILITY IN EWES GRAZING ONION GRASS

In a sheep flock near Bendigo in northern Victoria, sustained grazing of onion grass was suspected as the cause of unexpectedly low pregnancy rates in one mob. In the affected mob, pregnancy rate was 24%, whereas in the remaining flock, pregnancy rates were about 85%. Scanning via ultrasound showed that some had mummified foetuses, and others had a non-pregnant but fluid-filled uterus with cotyledons suggesting recent abortion. The affected mob was the only one on the property to have grazed onion grass-dominant pastures, and had done so for two years. This syndrome of infertility associated with grazing onion grass is well known in the area. It disappears following application of fertiliser to soils, and removal of onion grass dominance in pastures.

SUSPECTED BOTULISM IN HORSES

On a horse farm on the Mornington Peninsula, east of Melbourne, nine horses died or were destroyed after becoming affected with suspected botulism. The horses, aged from five months to three years old, died over a four weeks. Within 24 hours, they progressed from showing fasciculation of the triceps muscle, mild ataxia and hyperaesthesia to recumbency, flaccid paralysis and death. Cardiovascular, respiratory and temperature parameters were normal throughout much of the short clinical course. There was no response to a wide range of intensive treatments including administration of type C and D botulinum antitoxins. There were no significant gross findings on post mortem examination. Histological findings and haematology and biochemistry gave no indication of infection, or specific organ damage. Serology for herpes viruses and types C and D botulinum toxin was negative. Evidence pointed to one bale of clover hay or intermittent contamination of milling machinery on the property with dead rodents as being the source of toxin. However, toxin was not detected in feed materials, and no poisonous plants or dead rodents or reptiles were found. Although a diagnosis of botulism was not supported by laboratory tests, the low sensitivity of these tests is well known, and suspicions of botulism remain high based on the character of the clinical signs, and elimination of other known causes.

Western Australia



Contributed by:
Richard Norris
Department of Agriculture – WA

SURVEILLANCE ACTIVITIES

Laboratory testing was conducted on 330 investigations of animal disease during the quarter. Of these, 57 were cost-recovery (private benefit) cases and 273 were charge-exempt (public benefit and therefore funded directly by the Government). There were 2 exotic disease alerts and 14 notifiable disease reports during the quarter. Seventy-eight disease outbreaks with mortality or morbidity greater than 10% were investigated.

NOTIFIABLE DISEASES

Eleven category A(ii) (endemic in Australia but not in WA), two category C(ii) (Zoonotic) and one C(i) (disease significant to trade) notifiable disease reports were made during the quarter. Ovine Johne's disease continues to be diagnosed in trace forward properties linked to the original infected premises and neighbouring properties. At the date of writing, infection has been confirmed on eight properties.

EXOTIC DISEASE ALERTS

Both cases were category 1 alerts (low index of suspicion). Avian influenza and Newcastle disease virus were excluded in an investigation of peritonitis and deaths in 40-week-old layers near Perth.

DISEASES OF SIGNIFICANCE

During the period, significant disease outbreaks were investigated in 17 bovine and 53 ovine submissions. Presenting syndromes included abortion, diarrhoea, genital lesions, ill-thrift, infertility, jaundice, lameness, nervous signs, respiratory signs, skin lessions, sudden death and weakness.

SKIN LESIONS IN SHEEP

Necrotic dermatitis and loss of skin following backline treatment for lice have been encountered in sheep in the Esperance area. In one instance, 120 of 3400 sheep suffered injuries consistent with chemical burns along the line where a post-shearing backline treatment had been applied. In another case, 40 of 200 full-mouth ewes suffered a severe skin reaction that led to shedding of the affected area of the back. However, post-shearing sunburn alone has resulted in similar cases in previous years at Esperance and Badgningarra, so there is some debate about the role of backline treatment in causing this condition.

OXALATE POISONING

Oxalate poisoning due to slender iceplant (*Mesembryanthemum nodiflorum*) caused the death of 30 of 500 Merino hoggets in the Doodlakine area. Histopathological examination revealed widespread oxalate crystals within renal tubules, but little (if any) tissue damage. Acute death due to oxalate poisoning usually results from hypocalcaemia as the oxalate ion binds readily with calcium. Severe renal damage is seen later if the animal survives as crystal formation in the renal tubules provokes a strong inflammatory reaction. There can often be a concurrent rumenitis due to oxalate crystal formation below the rumen epithelium. Other cases have been recorded at Merredin, Burracoppin and Nangeenan.

MISCELLANEOUS SHEEP CONDITIONS

Severe brain lesions due to enterotoxaemia continue to be encountered despite the existence of a highly effective vaccine. Lupinosis has been a problem in many areas this year. In one particular case, weaners appeared to prefer the lupin stubble rather than the grain. One hypothesis currently being tested is that sugars present in the stubble may make it more palatable. Annual ryegrass toxicity (ARGT) has been seen at Kojonup in 5-month-old lambs and at Cranbrook. ARGT has not been the problem it has been in previous years probably due to the 2002 drought reducing the nematode populations in most areas. *Yersinia enterocolitica* was isolated from faecal cultures collected from a flock in which 30 of 700 lambs had died, and another 30 suffered from severe diarrhoea.

ATAXIA IN A CALF

Ataxia in a six-month-old Aberdeen Angus calf born on a Badgingarra property was suspected to be due to tagasaste-associated leucodystrophy, a condition that had been diagnosed on this property previously. However, in contrast to previous cases, the degenerative lesion appeared to involve the axon itself rather than the myelin sheath. In addition, this calf was normal at birth and neither it, nor its mother, had ever had access to the plant. In the tagasaste-associated disease, affected calves were born to mothers that had grazed tagasaste during late pregnancy. All such calves have been stillborn or suffered from mild to severe ataxia and muscle tremors from birth. The definitive cause of the leukodystrophy and ataxia in this calf has not been determined.

EPHEMERAL FEVER

Ephemeral fever (three day sickness) may have been the cause of mortalities and sickness in heifers from several properties in the Pilbara. Several of the sick animals died, but others recovered after about three days. Subsequent tests showed that cattle on the affected properties were serologically positive to ephemeral fever. Recent routine serological monitoring of sentinel herds in northern Australia has also shown that the virus that causes the disease has reappeared after an absence of several years (see the National Arbovirus Monitoring Program report in *AHSQ* Vol. 8 No. 4).

PORCINE ENZOOTIC PNEUMONIA AND PROLIFERATIVE HAEMORRHAGIC ENTEROPATHY

Porcine enzootic pneumonia and proliferative haemorrhagic enteropathy was seen in pigs in a straw-based housing system at Kojonup, associated with a marked increase in post-weaning mortality (>30/ week). There was widespread diarrhoea and coughing in pigs aged from 3 to 24 weeks. Autopsy of two 'finisher' pigs and one weaner revealed lung lesions that were highly characteristic of mycoplasmal infection. One of the older pigs also had a thickened ileum and haemorrhagic large intestines. Characteristic histopathological lesions and the presence of large acid-fast spirochaete-like bacteria (consistent with *Lawsonia intracellularis*) in intestinal smears confirmed a diagnosis of proliferative haemorrhagic enteritis.

GRANULOMATOUS ENCEPHALOMYELITIS IN A GOAT

Granulomatous encephalomyelitis was diagnosed in a seven-week old female Boer goat from Kelmscott that showed no signs others than poor weight gain and a wry neck. Microscopically, there was a pyogranulomatous encephalitis confined primarily to the white matter and a similar, more severe lesion, in the cervical spinal cord. The severity of the lesions belied the absence of significant CNS signs. Differential diagnoses included caprine arthritis–encephalomyelitis (CAE) and listeriosis. However, no bacteria could be found in gram stained sections, and the dam and twin were CAE negative. Subsequent tests showed both animals were serologically positive to *Neospora* sp.

Quarterly Disease Statistics

Quarterly disease statistics — control activities

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, deer 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 1 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 2004. A new National Strategic Plan for bovine JD has recently been endorsed. 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) or higher shown in Table 2.

Information about components of the National JD Control Program can be obtained from State coordinators and Animal Health Australia's JD coordinator, David Kennedy 02 6365 6016. Lists of beef, dairy and alpaca herds and sheep flocks assessed in the Market Assurance Programs are available on the internet (at www.aahc.com.au/jdmap).

Table 1: Herds/flocks with JD at 31 March 2004

	Cattle	Sheep	Goats	Deer	Alpaca	Total
NSW	138	352*	9	1	0	500
NT	0	0	0	0	0	0
QLD	0	0	0	0	0	0
SA	52	58	6	2	0	118
TAS	23	45	6	0	0	74
VIC	1129	184	7	7	2	1329
WA	0	8	0	0	0	8
AUS	1342	647	28	10	2	2029

* Individual properties infected with JD in sheep are no longer reported in high prevalence regions of NSW.

Table 2: Herds/flocks with a JDMAP status of at least MN1/TN1 status at 31 March 2004

	Cattle	Sheep	Goat	Alpaca	Total
NSW	799	335	36	62	1232
NT#	0	0	0	0	0
QLD#	0	4	0	0	4
SA	286	249	17	36	588
TAS	112	35	1	1	149
VIC	268	78	2	26	374
WA#	0	0	0	0	0
AUS	1465	701	56	125	2347

#Herds/flocks in Free or Protected Zones are equivalent to status of MN1 or better because of the zone's status.

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 3 shows the number of accredited flocks at the end of the quarter.

Table 3: Ovine brucellosis accredited-free flocks at 31 March 2004

NSW	NT	QLD	SA	TAS	VIC	WA	AUS
751	0	55	489	103	621	138	2157

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 2004

	NSW	NT	QLD	SA	TAS	VIC	WA	AUS
Free	1226	0	982	516	679	6270	360	10 033
Herds	1234	0	987	516	741	6340	360	10 178

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

For information about the Disease Watch Hotline, contact Jamie Penrose, Animal Health 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 5.

Table 5: 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 03	5614	493	16018	406	1689	308	2277	4	686	3	353	11
Apr–Jun 03	6239	725	7045	487	1526	421	851	0	561	8	504	11
Jul–Sep 03	2854	724	6307	445	1499	354	2696	8	790	0	376	26
Oct–Dec 03	11778	749	15560	278	1901	300	9559	16	806	2	234	11
Jan–Mar 04	9689	542	7550	318	1746	289	4742	0	547	5	411	24
NSW	2411	65	5134	10	564	47	1595	0	251	0	253	20
NT	681	232	860	278	758	171	9	0	0	0	0	0
QLD	862	243	223	16	250	61	34	0	111	1	5	1
SA	1145	0	1154	0	0	0	1561	0	1	0	0	0
TAS	0	0	0	0	0	0	183	0	0	0	0	0
VIC	97	0	131	0	118	0	155	0	94	0	57	3
WA	4493	2	48	14	56	10	1205	0	90	4	96	0

Quarterly disease statistics — surveillance 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 181 abortion investigations were performed during the reporting period — all with negative results for bovine brucellosis, as shown in Table 6.

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 7 summarises results from the program.

Table 6: Surveillance for bovine brucellosis

	Abortion investigations		Test for other reasons	
	Tests	+ve	Tests	+ve
Jan–Mar 03	183	0	5133	0
Apr–Jun 03	157	0	1728	0
Jul–Sep 03	131	0	2114	0
Oct–Dec 03	181	0	4161	0
Jan–Mar 04	294	0	714	0
NSW	14	0	264	0
NT	0	0	9	0
QLD	129	0	259	0
SA	0	0	76	0
TAS	7	0	0	0
VIC	12	0	79	0
WA	132	0	27	0

Table 7: Results of the National Granuloma Submission Program

	Granulomas submitted	TB +ve
Jan–Mar 03	883	0
Apr–Jun 03	1299	0
Jul–Sep 03	1752	0
Oct–Dec 03	1676	0
Jan–Mar 04	1187	0
NSW	67	0
NT	0	0
QLD	839	0
SA	82	0
TAS	10	0
VIC	29	0
WA	160	0

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. Tables 8 and 9 summarise NAQS activity in Australia over the past five quarters.

Contact: David Banks, Biosecurity Australia, DAFF

Table 8: Summary of recent NAQS activity in Australia

	Jan–Mar 03		Apr–Jun 03		Jul–Sep 03		Oct–Dec 03		Jan–Mar 04	
	Tested	+ve	Tested	+ve	Tested	+ve	Tested	+ve	Tested	+ve
Aujeszky's disease	197	0	53	0	235	0	34	0	71	0
Classical swine fever	197	0	53	0	235	0	34	0	71	0
Japanese encephalitis	210	0	362	17	169	0	197	0	394	16
Nipah virus	197	0	76	0	192	0	28	0	53	0
Porcine reproductive and respiratory syndrome	197	0	53	0	235	0	34	0	71	0
Surra	69	0	182	0	175	0	45	0	127	0

In 1995–97, 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 sites on islands in the Torres Strait, and for the first time on the mainland at the tip of Cape York Peninsula. Sentinel pigs at Badu Island have seroconverted each wet season since then (except for 1999), and seroconversions have been detected on other central Torres Strait islands in surveys. Positive results were also detected at one sentinel pig site on the tip of Cape York Peninsula in February 2004.

PORTS SURVEILLANCE PROGRAM

Biosecurity Australia conducts the Ports Surveillance Program for *Culicoides*, screw-worm fly, exotic bees and bee mites. Seaports, particularly those servicing returning livestock vessels and those dealing with high risk deck cargo such as timber, mining equipment and containers, are considered to be high risk locations for incursions of such pests. The program increases the capacity to detect any incursions at an early stage, and this in turn increases the probability of a successful eradication program. The *Culicoides* surveillance also supports the livestock export trade by confirming the continuous or seasonal absence of *Culicoides* vectors at ports from which livestock are loaded. Table 9 shows the number of times that insect trap sites were inspected for the Port Surveillance Program — no exotic insects or mites were detected.

Contact: David Banks, Biosecurity Australia, DAFF

Table 9: Number of inspections of insect trap sites

	Jan–Mar 03	Apr–Jun 03	Jul–Sep 03	Oct–Dec 03	Jan–Mar 04
Port surveillance					
Asian bees	16	12	15	10	12
Bee mites	31	30	15	14	20
Culicoides	35	32	31	32	29
Screw-worm fly	36	38	31	31	30
NAQS					
Screw-worm fly	108	108	108	108	108

SALMONELLA SURVEILLANCE

The National Enteric Pathogen Surveillance Scheme (NEPSS) 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 NEPSS 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 NEPSS. Table 10 summarises *Salmonella* isolations from animals notified to NEPSS for the quarter.

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

Table 10: Salmonella notifications, 1 January to 31 March 2004

Serovars	avian	bovine	canine	equine	feline	ovine	porcine	other	Total
S. Bovismorbificans	0	7	1	0	0	0	1	0	9
S. Dublin	0	12	1	0	0	0	0	0	13
S. Infantis	0	1	3	0	0	0	0	1	5
S. Typhimurium	5	32	4	1	10	7	8	0	67
Other	0	20	14	4	3	0	4	24	69
Total	5	72	23	5	13	7	13	25	163

ZOONOSES

The National Notifiable Diseases Surveillance System (NNDSS) of the Communicable Diseases Network Australia collects statistics about many human diseases. A summary of information about five important zoonoses is submitted to NAHIS each quarter (see Table 11).

Contact: Communicable Diseases Intelligence, Australian Government Department of Health and Ageing (Internet address: http://www.cda.gov.au/pubs/cdipubs.htm)

Table 11: Notifications of zoonotic diseases in humans

Disease	Q1-03	Q2-03	Q3-03	Q4-03	Q1-04	Current quarter							
					AUST	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Brucellosis#	5	8	4	3	3	0	0	0	3	0	0	0	0
Leptospirosis	33	46	21	28	53	0	10	0	42	0	0	1	0
Listeriosis	24	18	12	18	17	0	6	1	3	0	1	3	3
Ornithosis	27	31	69	65	63	0	12	0	0[nn]	1	0	48	2
Q fever	205	128	93	112	98	0	52	1	40	2	0	3	0

nn disease is not notifiable in these States

Brucella melitensis and *Brucella abortus* are exotic to Australia.

NATIONAL TSE SURVEILLANCE PROGRAM

The National Transmissible Spongiform Encephalopathies 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 12 summarises the activity of the program over the past five quarters. All specimens tested were negative for TSEs. Information about NTSESP is available on the internet (at www.aahc.com.au/surveillance/ntsesp).

Table 12: Number of animals tested under NTSESP (All were negative for TSE)

	Jan–Mar 03		Apr–Jun 03		Jul–Sep 03		Oct–Dec 03		Jan–Mar 04	
	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep
NSW	15	26	45	18	36	44	20	48	24	38
NT	1	0	7	0	7	0	8	0	3	0
QLD	39	4	49	8	49	7	40	2	20	9
SA	5	8	8	11	5	14	8	33	3	17
TAS	3	0	1	7	2	4	0	4	1	1
VIC	13	13	26	19	34	39	17	26	19	11
WA	7	35	1	15	15	27	8	28	5	14
AUS	83	86	137	78	148	135	101	141	75	90

NATIONAL RESIDUE SURVEY

Of 3309 samples tested during the quarter for agricultural and veterinary chemicals, an anthelmintic and antimicrobial residue were detected, and there were two growth promotant-related hormones and 32 metal residue detections. The results are summarised in Table 13.

The anthelmintic residue, doramectin 0.027 mg/kg, was detected in a cattle yearling. This exceeded the maximum residue level (MRL) of 0.01 mg/kg. A traceback investigation has been initiated, but as yet the report is unavailable. The antimicrobial residue, neomycin 0.76 mg/kg, was detected in a cow. Although this exceeded the MRL of 0.5 mg/kg, a traceback investigation was not initiated, as the detection is below the residue action level (RAL). The two hormone residues were (17-alpha) 19-nortestosterone, found in urine samples from a cattle and a sheep at 0.004 mg/kg and 0.007 mg/kg, respectively. Both residues were indicative of endogenous production, and no traceback investigations were initiated.

Of the 32 metal detections found during the quarter, two were from sheep and the remaining 30 were from minor species that have no set maximum level (ML). Therefore, the detections were not violations, and were significantly below the established MLs set for cattle, sheep and pig. The two sheep detections were both cadmium (1.9 and 2.4 mg/kg), exceeding the ML of 1.25 mg/kg but below the RAL of 2.5 mg/kg. No traceback investigations were initiated.

Further results, reports and information on NRS can be found on the internet (at www.daff.gov.au/nrs).

Contributed by: Daryl Crapp, National Residue Survey, DAFF

Table 13: National Residue Survey, 1 January to 31 March 2004
Each pair of figures gives the number of residues above the maximum residue limit or the maximum level and the number of samples tested.

	NSW		NT		QLD		SA		TAS		VIC		WA		AUS	
Anthelmintics																
cattle	1	36	0	1	0	46	0	8	0	10	0	46	0	12	1	159
pigs	0	7	0	0	0	4	0	4	0	1	0	5	0	1	0	22
sheep	0	97	0	0	0	4	0	31	0	15	0	70	0	43	0	260
other	0	7	0	0	0	1	0	7	0	0	0	7	0	2	0	24
Total	1	147	0	1	0	55	0	50	0	26	0	128	0	58	1	465
Antimicrobials																
cattle	0	78	0	0	0	88	0	16	0	7	1	76	0	15	1	280
pigs	0	24	0	0	0	19	0	21	0	2	0	24	0	6	0	96
sheep	0	157	0	0	0	4	0	46	0	8	0	69	0	73	0	357
other	0	2	0	0	0	5	0	4	0	0	0	10	0	4	0	25
Total	0	261	0	0	0	116	0	87	0	17	1	179	0	98	1	758
Growth promotants																
cattle	0	96	0	0	2	119	0	14	0	13	0	60	0	23	2	325
pigs	0	12	0	0	0	12	0	8	0	0	0	10	0	2	0	44
sheep	1	101	0	0	0	0	0	42	0	5	0	62	0	56	1	266
other	0	0	0	0	0	3	0	0	0	0	0	7	0	2	0	12
Total	1	209	0	0	2	134	0	64	0	18	0	139	0	83	3	647
Insecticides																
cattle	0	95	0	0	0	104	0	31	0	11	0	89	0	20	0	350
pigs	0	7	0	0	0	5	0	4	0	0	0	8	0	1	0	25
sheep	0	178	0	0	0	8	0	74	0	14	0	118	0	98	0	490
other	0	17	0	3	0	15	0	17	0	0	0	12	0	5	0	69
Total	0	297	0	3	0	132	0	126	0	25	0	227	0	124	0	934
Metals																
cattle	0	17	0	0	0	22	0	8	0	2	0	21	0	4	0	74
pigs	0	3	0	0	0	3	0	4	0	0	0	11	0	1	0	22
sheep	0	28	0	0	0	3	0	13	0	5	0	27	2	9	2	85
other	7	12	1	1	4	3	8	4	0	0	8	8	2	3	30	31
Total	7	60	1	1	4	31	8	29	0	7	8	67	4	17	32	212
Miscellaneous																
cattle	0	48	0	0	0	38	0	6	0	7	0	41	0	15	0	155
pigs	0	12	0	0	0	16	0	7	0	1	0	8	0	0	0	44
sheep	0	34	0	0	0	2	0	16	0	5	0	19	0	13	0	89
other	0	1	0	0	0	1	0	0	0	0	0	3	0	0	0	5
Total	0	95	0	0	0	57	0	29	0	13	0	71	0	28	0	293

AUSTRALIAN MILK RESIDUE ANALYSIS SURVEY

The Australian Milk Residue Analysis (AMRA) Survey is an independent monitoring program for agricultural and veterinary residues and environmental contaminants in raw cow's milk. The AMRA Survey is coordinated by Dairy Food Safety Victoria on behalf of the Australian Dairy Authorities Standards Committee (ADASC) and the Australian dairy industry. The AMRA Survey is an integral part of the Australian dairy industry's efforts in securing access to major export markets, including the European Union. The samples taken in the Survey are from bulk milk farm pick-up tankers. Table 14 summarises the results for the quarter.

For further information contact: Kelly Long (AMRA Survey Coordinator), Dairy Food Safety Victoria, phone 03 9810 5900; fax 03 9819 4299; e-mail klong@dairysafe.vic.gov.au

Table 14: Australian Milk Residue Analysis Survey, 1 January to 31 March 2004
Each pair of figures gives the number of samples above the maximum residue limit and the number of samples tested.

	NSW		NT		QLD		SA		TAS		VIC		WA		AUS	
Aflatoxins	0	1	0	0	0	0	0	0	0	0	0	7	0	1	0	9
Antimicrobials	0	11	0	0	0	10	0	8	0	7	0	86	0	5	0	127
Benzimidazoles	0	1	0	0	0	1	0	1	0	1	0	12	0	0	0	16
Levamisole	0	3	0	0	0	1	0	1	0	1	0	13	0	0	0	19
Macrocyclic Lactones	0	2	0	0	0	1	0	1	0	0	0	13	0	1	0	18
Organochlorines	0	2	0	0	0	1	0	1	0	1	0	8	0	1	0	14
Organophosphates	0	2	0	0	0	1	0	1	0	1	0	8	0	1	0	14
PCBs	0	2	0	0	0	1	0	1	0	1	0	8	0	1	0	14
Synthetic pyrethroids	0	2	0	0	0	1	0	1	0	1	0	8	0	1	0	14
Triclabendazole	0	11	0	0	0	10	0	8	0	7	0	86	0	5	0	127

SUSPECT EXOTIC OR EMERGENCY DISEASE INVESTIGATIONS

There were 60 investigations of diseases suspected to be either exotic or a possible emergency reported during the quarter, as shown in Table 15. More details about some of these investigations can be found in State reports.

Table 15: Exotic or emergency disease investigations reported from 1 January to 31 March 2004

DISEASE	SPECIES	STATE	MONTH	RESPONSE	FINDING
African horse sickness	equine	QLD	Feb	2	crotalaria poisoning
Anthrax	bovine	VIC	Jan-Mar	1	negative; 9 investigations
Anthrax	bovine	VIC	Jan-Mar	2	negative; 4 investigations
Anthrax	bovine	VIC	Jan-Mar	5	positive; 3 investigations
Avian influenza	avian	QLD	Jan-Feb	1	negative; 2 investigations
Avian influenza	avian	QLD	Feb-Mar	2	negative; 2 investigations
Avian influenza	avian	QLD	Jan	3	negative
Avian influenza	avian	NSW	Jan-Mar	3	negative; 5 investigations
Avian influenza	avian	NT	Feb	3	botulism
Avian influenza	avian	VIC	Jan-Feb	2	negative; 4 investigations
Avian influenza	avian	VIC	Feb	1	egg peritonitis
Avian influenza	avian	TAS	Feb	2	negative; 2 investigations
Avian influenza	avian	TAS	Mar	3	negative
Bovine brucellosis	bovine	VIC	Jan-Feb	2	negative; 2 investigations
Bovine tuberculosis	bovine	VIC	Feb	2	nephritis
Canine brucellosis	canine	NT	Feb	3	negative
Caprine and ovine brucellosis	caprine	NSW	Jan	2	negative
Equine encephalitis	equine	SA	Feb	3	negative
Equine influenza	equine	QLD	Mar	3	*Streptococus zooepidemicus*
Foot-and-mouth disease	bovine	QLD	Feb-Mar	1	negative; 2 investigations
Foot-and-mouth disease	bovine	QLD	Jan-Feb	2	negative; 3 investigations
Hendra virus	equine	NSW	Jan	3	plant poisoning (suspected)
Hendra virus	equine	QLD	Jan	2	negative
Newcastle disease	avian	NSW	Jan	3	negative; 2 investigations
Newcastle disease	avian	NSW	Feb-Mar	2	negative; 3 investigations
Newcastle disease	avian	TAS	Feb	2	negative
Newcastle disease	avian	TAS	Mar	3	negative
Newcastle disease	avian	WA	Jan-Feb	3	negative; 2 investigations
Rabies	bovine	SA	Mar	3	negative

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
7 Eradication

NAHIS contacts

The National Animal Health Information System (NAHIS) collects summaries of animal health information from many sources. NAHIS is on the internet (at www.aahc.com.au/nahis). Because NAHIS does not duplicate the data in those systems, the 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	chris@ausvet.com.au
David **Banks**	Northern Australia Quarantine Strategy	02 6272 5444	02 6272 3399	david.banks@daff.gov.au
Chris **Bunn**	Emergency Disease Preparedness, AFFA	02 6272 5540	02 6272 3372	chris.bunn@daff.gov.au
John **Elliott**	Tas. State Coordinator	03 6336 5334	03 6336 5374	john.elliott@dpiwe.tas.gov.au
Jenny **Hutchison**	Australian Government NAHIS Coordinator	02 6272 4719	02 6272 3150	jenny.hutchison@daff.gov.au
Tristan **Jubb**	Vic. State Coordinator	03 5430 4545	03 5430 4520	tristan.jubb@dpi.vic.gov.au
David **Kennedy**	Johne's Disease Coordinator	02 6365 6016	02 6365 6088	david@ausvet.com.au
Diane **Lightfoot**	National Enteric Pathogen Surveillance Scheme	03 9344 5701	03 9344 7833	d.lightfoot@ microbiology.unimelb.edu.au
Kelly **Long**	Australian Milk Residue Analysis Survey	03 9810 5900	03 9819 4299	klong@dairysafe.vic.gov.au
Angela **Merianos**	Communicable Diseases Intelligence	02 6289 1555	02 6289 7791	www.health.gov.au
Peter **Miller**	National Residue Survey	02 6272 3762	02 6272 4023	peter.miller@daff.gov.au
Barbara **Moloney**	NSW State Coordinator	02 6391 3687	02 6361 9976	barbara.moloney@ agric.nsw.gov.au
Richard **Norris**	WA State Coordinator	08 9368 3637	08 9367 6248	rnorris@agric.wa.gov.au
David **Pitt**	Qld State Coordinator	07 4722 2694	074778 4307	david.pitt@dpi.qld.gov.au
Brian **Radunz**	NT State Coordinator	08 8999 2130	08 8999 2089	brian.radunz@nt.gov.au
Neville **Spencer**	National Granuloma Submission Program	02 6271 6650	02 6272 5442	neville.spencer@aqis.gov.au
John **Weaver**	SA State Coordinator	08 8207 7925	08 8207 7852	weaver.john2@saugov.sa.gov.au
Simon **Winter**	Animal Health Australia Program Manager	02 6203 3988	02 6232 5511	simon.winter@aahc.com.au
Rupert **Woods**	Australian Wildlife Health Network	02 9978 4749	02 9978 4516	rwoods@zoo.nsw.gov.au

AnimalHealth Surveillance