Animal Health Surveillance

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QUARTERLY REPORT

CONTENTS

Preface

During the quarter, each of Animal Health Australia's three core programs (Animal Disease Surveillance, Animal Health Services and Emergency Animal Disease Preparedness) was reviewed at a workshop. This issue reports on recommendations made at those workshops. In August, the Standing Committee on Agriculture and Resource Management endorsed the establishment of the Australian Wildlife Health Network.

Other topics include highlights of disease surveillance activities, items of interest from States and Territories, and summaries of disease surveillance and monitoring programs reported to Australia's National Animal Health Information System (NAHIS). Only summary information is recorded in NAHIS, with detailed data being maintained by the source organisation. The information included in this report is accurate at the time of publication but, because of the short reporting and production time, minor discrepancies may occur. NAHIS is accessible on the Animal Health Australia website (at www.aahc.com.au/nahis).

Gardner Murray
Australian Chief Veterinary Officer

Animal Health Australia's program workshops

Animal Health Australia has three core subscription-funded programs: the Animal Disease Surveillance Program, the Animal Health Services Program and the Emergency Animal Disease Preparedness Program.

Each program is reviewed annually through a members' workshop, at which progress and priorities are discussed and recommendations made for consideration by the Board of Animal Health Australia. The Board then provides advice and direction to the Program's Advisory Committee (PAC).

ANIMAL DISEASE SURVEILLANCE PROGRAM

The annual workshop for the Animal Disease Surveillance Program (ADSP) was held in September to consider both existing priorities and any other priorities identified by members. The workshop also provided an opportunity to consider a number of animal disease surveillance activities, identified in the Animal Health Service Performance Standards, the ADSP Baseline Study, and Animal Health Australia's Risk Management Review.

As well as 23 priorities identified from published reports, members identified a further nine. The focus of the workshop was to distil these down to a manageable number for the program to deal with appropriately, as follows:

- Review and further develop nationally standardised operating procedures, specification of competencies, training programs and resource allocations to ensure the investigation of unusual disease events and maximise the chances of early recognition of exotic and new diseases. This applies to field and laboratory activities in both the public and private sectors.
- Investigate improved data collection techniques using new technologies, for field and laboratory applications.

Animal Health Australia
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- Develop nationally agreed standards for jurisdictional laboratory and field information systems.
- Develop a communications plan to promote surveillance to the livestock industries.
- Review the Animal Health Services Performance Standards for Surveillance.

PAC will interpret the outcomes of the annual Members' Workshop and recommend how the ADSP can be streamlined to improve the delivery of significant national outcomes. These revised priorities will be considered by PAC at its meeting in October.

EMERGENCY ANIMAL DISEASE PREPAREDNESS PROGRAM

The Members' Workshop for the Emergency Animal Disease Preparedness Program (EADPP), held in September, made the following recommendations:

Workshop Approach

That Animal Health Australia hold an annual two-day member workshop, bringing together representatives of the three core programs to enhance the relationship and communication between the programs. There are practical difficulties for PAC Members in communicating with their constituencies. PAC is currently akin to a liaison committee and has not had the opportunity to be as effective as it might be.

Program Plan Key Performance Measures

That the EADP PAC reviews the current program plan 2001–02 to 2003–04 to develop better key performance measures, rather than the current mile-stones, to assist in communicating program outcomes.

EADPP needs to consider the activities undertaken in States/Territories. Control programs for feral animals are not comprehensively documented. Further, it is not clear what is the responsibility of Animal Health Australia for recovery issues resulting from a disease outbreak that has significant effects on communities. EADPP through Animal Health Australia needs to take the initiative in achieving greater consistency between States and Territories.

Required Skills

That Animal Health Australia take a leadership role in raising concerns to the Standing Committee on Agriculture and Resource Management and to the Agriculture and Resource Management Council of Australia and New Zealand about the declining skills base and lack of career structure for animal health specialists in government agencies.

That industry members lobby governments on the serious decline of the national skills base and resultant risks to meeting future service delivery standards, domestic marketing and international trade requirements.

That industry members approach Research and Development Corporations for funding to train industry and improve animal health skills and knowledge.

Communications

To develop an improved communication strategy to engage individual producers, not just industry peak bodies and improve political support. This should include leveraging public relations activities being undertaken by Company Members.

A two-day meeting of PAC is planned for November to allow time to develop a risk framework for the EADPP and to redevelop the work program and budget in light of accelerated projects such as the system for managing information during an exotic disease emergency and other priorities emerging from the Council of Australian Governments (COAG) process in response to foot-and-mouth disease.

ANIMAL HEALTH SERVICES PROGRAM

The annual Members' workshop for Animal Health Services Program (AHSP), held in August, made four recommendations similar to those made by the EADPP workshop, and three further recommendations:

Accreditation Program for Australian Veterinarians

That the Accreditation Program for Australian Veterinarians (APAV) be expanded to recognise EAD competencies and have the objective of eventually being self-funding. (APAV is the cornerstone of Australia's strategy to integrate non-government veterinarians into the national animal health system and to use their skills and knowledge more effectively to support the international standing of Australia's animal health services.)

Second Animal Health in Australia Conference 2002

That the conference be structured to attract more producers and engage sponsors to keep the registration fee down and preferably be self-funded.

That the conference program should be focused on outcomes and be relevant to the program .

Further information can be obtained from the program managers:

Animal Disease Surveillance Program, Simon Winter, phone: 02 6203 3988, fax: 02 6232 5511, and e-mail: simon.winter@aahc.com.au

Emergency Animal Disease Preparedness Program and Animal Health Services Program, Peter Thornber, phone: 02 6203 3944, fax: 02 6232 5511, and e-mail: peter.thornber@aahc.com.au

Australian Wildlife Health Network

In November 1999, a national workshop of some 70 participants from a wide range of organisations was convened to start working towards the development of an Australian wildlife health network (*AHSQ* Vol. 4, No. 4). A steering group formed at this workshop decided to undertake a feasibility study to identify sources of funding, explore potential organisational models, and to initiate a business plan. Through funds provided by the Wildlife Exotic Disease Preparedness Program, a project officer was appointed undertake this work.

A feasibility study, undertaken in consultation with a diverse range of industry, government and community stakeholders representing agriculture, health and the environment in each State, Territory and the Commonwealth, was completed in May this year. It found there was widespread support for establishing a national wildlife health network in Australia. The key outcome of the network was identified as establishment of a national database of surveillance and diagnostic information, and of wildlife expertise.

As a result of the study, the August meeting of the Standing Committee on Agriculture and Resource Management (SCARM) agreed to the initial funding of $160 000 from the Wildlife Exotic Disease Preparedness Program to establish the Australian Wildlife Health Network (AWHN). The network will commence operation on 1 July 2002.

A national coordinator will be appointed to manage a web site, a list server, and a national database storing information about surveillance, diagnostic methods, and wildlife experts. A host agency is being sought to accommodate the network. Other activities of the network will include the development of protocols and coordination of research, surveillance, training and education. A framework for national wildlife health surveillance and regular analysis from information submitted quarterly by States is being developed.

A two-tiered management committee will manage the network — an 'inner core' of State and Commonwealth agricultural and pest animal management agencies, and an 'outer core' of conservation and health agencies, game meat industries, zoos, universities and community wildlife organisations.

The network will improve national information on wildlife diseases and thus help to ensure the early identification of emerging diseases or incursions of exotic diseases affecting wildlife.

Contact: Chris Bunn, AWHN Convenor
Office of the Chief Veterinary Officer, AFFA

Aquatic animal health

SURVEILLANCE AND MONITORING CONSULTANCY

In March 2001, Fish Health Management Committee endorsed the drafting of a business/operational plan for aquatic animal health surveillance in Australia. The draft, prepared by Ausvet Animal Health Services, was discussed at length at a stakeholder meeting in August. This meeting decided to limit the scope of the plan to aspects of collating and administering already existing data, rather than expanding surveillance programs. The meeting recommended initiating the establishment of the Australian Aquatic Animal Health Information System (AAAHIS). AAAHIS is designed to be an extension to the existing National Animal Health Information System (NAHIS) and would be available through the NAHIS website. The AQUAPLAN Business Group has endorsed the business/operational Plan.

The key outputs of the AAAHIS business/operational plan are:

1. A small number of additional tables in the existing NAHIS database containing up-to-date text, summary numerical data and maps where required.

2. A specific page in the existing NAHIS web site to permit remote anonymous access to the information.

3. A section on surveillance in the existing AQUAPLAN newsletter.

4. A contribution to the report, Animal Health in Australia, which is produced through NAHIS.

5. Routine reports to the Office International des Epizooties (OIE) and Network of Aquaculture Centres in the Asia–Pacific (NACA).

6. Advice and reports to stakeholders and clients as required.

7. Publications in the scientific literature and presentations at conferences, seminars and meetings as appropriate.

8. Additional major priorities for the first year of this three-year plan:

- develop tables in the NAHIS database for a small number of example diseases;
- establish links between aquatic animal health specialists and existing NAHIS Coordinators to develop methods for the smooth capture of summary data from existing databases;

- develop a page within the existing NAHIS website;
- write fact sheets for the initially selected diseases for placement on the NAHIS website; and
- write a brief description of Australia's aquatic environments and aquatic animal populations (part of surveillance) and aquatic animal health resources (competent authority), which complies with requirements for risk analysis described in the International Aquatic Animal Health Code (2001).

Several of the outputs (especially 4, 5 and 6) are already in place, and plans will be drawn up by Fish Health Management Committee to implement the full plan.

MACQUARIE HARBOUR AQUATIC ANIMAL EMERGENCY DISEASE WORKSHOP

A regional emergency disease workshop was held at Strahan, Tasmania, in August. The workshop was organised cooperatively by the Tasmanian Salmonid Growers Association, including all the salmonid (salmon and trout) farmers in the area, the Tasmanian Department of Primary Industries, Water and Environment, and the Office of the Chief Veterinary Officer within Agriculture, Fisheries and Forestry – Australia.

The workshop provided the opportunity for all participants to discuss openly aspects of, and work cooperatively in, planning for an emergency salmonid disease incident in the region. The workshop was very well attended. All farmers in the Macquarie Harbour region participated as well as government veterinary and fish health officers who would be directly involved in the response to an emergency fish disease incident in Macquarie Harbour.

The workshop began with an outline of AQUAVETPLAN and the Tasmanian Fish Health Emergency Response Plan, and how both these contingency plans relate to the chain of events that occur during a fish health emergency response. Participants then discussed in detail the steps involved during the investigation, alert and operational stages of an emergency response at the farm and regional level. Particular attention was given to the source and availability of resources needed during these stages.

Once the detailed table of short and long-term action items that resulted from the workshop are implemented, the ability of Macquarie Harbour salmonid farmers to respond quickly and effectively to an emergency fish disease incident in their region will be significantly increased.

All participants considered the workshop successful and beneficial. It not only contributed to the region's emergency disease preparedness capabilities but also demonstrated the importance of regional cooperation and communications in disease management.

HEALTH HIGHLIGHTS

The first edition of *Health Highlights*, a quarterly newsletter of the Fisheries Research and Development Corporation's new Aquatic Animal Health Subprogram, has been produced. The subprogram was established earlier this year to provide a cohesive and national approach to aquatic animal health research and development in Australia as an initiative of AQUAPLAN.

The Aquatic Animal Health Subprogram leader is Dr Eva-Maria Bernoth, Manager Aquatic Animal Health within the Office of the Chief Veterinary Officer, Agriculture, Fisheries and Forestry — Australia. The scope of the subprogram is 'health', with a focus on infectious diseases. The objectives are to:

- coordinate Aquatic Animal Health Subprogram research projects (project applications, project management, communication, etc.);
- set strategic directions for aquatic animal health research and development in Australia; and
- facilitate the dissemination of information on, and results from, aquatic animal health research and development.

Health Highlights will contain details, results and milestone reports of all research projects managed by the subprogram. It also provides a means for researchers to communicate any news, results, announcements, and issues that those who are doing research on aquatic animal health may find interesting.

To be included on the *Health Highlights* mailing list, contact: Dr Iska Sampson, OCVO — AFFA, Box 858 Canberra ACT 2601, phone: 02 6272 3848, fax: 02 6273 5237, e-mail: iska.sampson@affa.gov.au .

Contributed by: Eva-Maria Bernoth, Office of the Chief Veterinary Officer, AFFA

ARMCANZ meeting

Ensuring Australian agriculture is protected from serious animal diseases such as foot-and-mouth (FMD) and bovine spongiform encephalopathy (BSE) was a major agenda item at the final meeting in Darwin of the Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) in mid-August.

Following recent decisions by the Council of Australian Governments (COAG), the issues currently handled by ARMCANZ will now be split across two new ministerial councils: the Natural Resource Management Council and the Primary Industries Ministerial Council. The Primary Industries Ministerial Council's inaugural meeting would be in Hobart on 1 March 2002.

FMD/BSE NATIONAL MANAGEMENT GROUP

Given the seriousness of recent outbreaks of animal diseases such as FMD and BSE in the United Kingdom and Europe, ARMCANZ discussed the importance of Australia boosting protection of its agricultural industries.

The Commonwealth, States and Territories are working together to ensure Australia can quickly control and eradicate any serious animal disease that enters Australia. ARMCANZ also supports Animal Health Australia's proposal to enhance training and planning in the short-term and provide continued maintenance over the longer term. The issue will be further discussed by COAG at its October 2001 meeting.

The European Commission will review Australia's BSE risk rating by early next year. At present, Australia holds the most favourable rating of 'Level 1'. The review will pay particular attention on the success of Australia's legislative powers to prohibit the use of meat and bone meal to ruminant animals such as cattle and sheep. Australia will be judged in large part on its ability to demonstrate compliance with this legislation and the effectiveness of any subsequent corrective action.

The States and Territories will thus undertake large-scale audit programs to reassure trading partners that Australia remains BSE-free. The ministers said that complete compliance with the policy and rules is essential.

ARMCANZ recognised that animal traceback and traceforward are essential for disease management. In this regard, they agreed that States and Territories, working with industry, would ensure effective trace-back and traceforward systems are in place in their respective jurisdictions, for cattle, sheep, pigs and other relevant species. States and Territories will report on progress at the Primary Industries Ministerial Council's meeting in March 2002.

IMPORT RISK ASSESSMENT

ARMCANZ noted that the Commonwealth, States and Territories are, and will continue to, work closely on import risk assessment matters. Ministers agreed to review progress in implementing the Memorandum of Understanding on Animal and Plant Quarantine Measures. A detailed discussion on this issue will take place at the first Primary Industries Ministerial Council meeting in March 2002

OVINE JOHNE'S DISEASE

Ministers noted there has been substantial progress in implementing the recommendations from the National Ovine Johne' Disease (OJD) Program Mid-term Review (see *AHSQ* Vol. 6 No. 2). They also noted that the Sheepmeat Council of Australia and Wool Producers are considering national funding arrangements to provide financial assistance to affected producers.

IMPLEMENTING THE BUDGET BOOST FOR QUARANTINE

The Australian Quarantine and Inspection Service (AQIS), and the Australian Customs Service (ACS), are deploying the additional resources — $596 million over four years — provided in the 2001 Budget. The extra funds will increase quarantine inspection rates to 80% at airports within 12 months, and 100% at all other border entry points within 18 months. Significant progress has already been made over the last 10 weeks, with inspection levels at airports already at 65 per cent.

The Commonwealth, States and Territories have confirmed a commitment to work closely to ensure Australia is kept free of serious pests and diseases. The commitment involves the relevant agencies ensuring the additional border resources are put in place as quickly as possible, and that AQIS receives the necessary professional and technical support from the States and Territories. AQIS will also provide regular progress reports on inspection levels and their effectiveness to the Ministerial Council.

COST-SHARING ARRANGEMENTS FOR ANIMAL DISEASES

Ministers agreed to commit to signing the cost-sharing arrangements for animal diseases, subject to final clearance through their relevant government processes.

Bovine tuberculosis cases in Queensland

This report summarises cases of bovine tuberculosis (TB) that have occurred in Queensland since the declaration of freedom from TB on 31 December 1997 to 30 September 2001.

A TB case was detected in June 1998 in south-east Queensland. This case was dealt with by the immediate total depopulation of two small herds involving 112 cattle. Subsequently, and until 1 July 2000, TB monitoring under the Tuberculosis Freedom Assurance Program — National Granuloma Submission Program (TFAP NGSP) and tuberculin skin-testing had not detected any further evidence of TB in Queensland. During that period, 3388 granuloma submissions were subject to laboratory examination from 6.48 million cattle inspected at abattoirs and 10 540 cattle were subject to skin-testing. From 1 July 2000 and to the end of September 2001, a further 3097 granulomas have been examined from 4.36 million cattle slaughtered and 18 279 subject to skin-testing. During this period, a total of eight animals originating from two properties have been detected on slaughter inspection to have had TB lesions.

CASE 00/01

In August 2000 a single thoracic lesion was detected in a seven-year-old cow at slaughter in north Queensland. The animal was immediately traced to a property in the Normanton area of north-west Queensland. The age of the infected animal indicated that residual infection was the most likely source of the recrudescence as the last case on that property was detected in a bull in 1991 — DNA typing of the mycobacteria isolated from the lesion indicates it was the same strain. After the previous case, a program of destocking and testing was instituted resulting in a return to Confirmed Free 2 status in 1993. Turnoff to slaughter since then of 5171 cattle has resulted in a number of granulomas being examined under NGSP, with all being considered negative for TB. The property is very large at 770 000 ha (1.93 million acres) and carries up to 30 000 cattle. Two other nearby properties are run in association with this property. These three properties were placed under quarantine in order to control cattle movements.

Trace forward investigations

Investigations revealed that 20 other properties had received stock or had some contact with stock from the affected property during the previous seven years. Three consignments had moved to three other States and although many of the cattle had been slaughtered in the interim, some were still alive and containment measures by quarantine were instituted in all States.

Eradication Activities

In the remainder of 2000, 12 188 cattle in Queensland originating from the three quarantined properties were subject to compulsory slaughter. A single retropharyngeal lesion was detected in one further cow at slaughter. A further 1228 cattle were subjected to tuberculin skin test with negative results. During 2001 a further 2500 cattle have been slaughtered and 9211 skin tested from the three source properties with no further detection of TB. Programs of investigation and eradication through further destocking to slaughter and skin testing were commenced on the 20 properties identified above. Essential requirements of the slaughter programs are complete musters to ensure all at-risk animals are removed. A number of the properties involved still hold desexed male and female cattle that are scheduled for slaughter in early 2002. These properties will remain under quarantine until that occurs.

Further destocking of 1670 cattle from the areas of origin of the animals on the index property with negative results has removed those cattle considered at highest risk from this area. Given the size of the paddocks, comprehensive and thorough programs for certifying a total clean-out will take some time to achieve.

The future program will entail further herd assessment by culling to slaughter of aged higher risk cattle and testing of younger, retained breeding cattle. Given the low prevalence, such a program has a good chance of success provided cattle management is of a high standard and clean musters are achieved. Requirements for permanent identification of cattle and for official inspections to certify all stock are mustered for slaughter or testing are built into the program.

CASE 00/02

In December 2000, a TB lesion was detected in the retropharyngeal lymph node of a two-tooth heifer at slaughter in south-east Queensland. Immediate traceback was to a property in the Taroom shire of Queensland but further investigations revealed the animal had been bred on a property further west in Balonne Shire. The investigations also revealed that the original cattle herd consisting of some 1500 cattle had been dispersed in a number of sales during 2000.

Traceforward investigations

Tracing found that 35 forward property destinations were involved in Queensland and 39 in New South Wales (NSW). The animals were contained by quarantining the herds and arrangements for destocking to slaughter were commenced early in 2001.

Eradication activities

All traced cattle were slaughtered, with infected animals being found on three more properties in Queensland and four in NSW. Further destocking was then carried out where companion animals were subject to dangerous exposure. No more than two infected animals were found in any traceforward group. In some cases, additional testing was necessary where across fence contacts were considered dangerous. In total, 775 head were consigned for compulsory slaughter in Queensland and 1535 head in NSW, while 894 head and 963 head respectively were subject to skin-testing programs. All known cattle relating to the original herd are now believed to have been slaughtered and only short term contact low risk cattle remain to be subjected to approved ongoing testing programs.

PROGRAM ADMINISTRATION

Under the Standard Definitions and Rules (SDRs) of TFAP, discovery of infection in the Free Area may not automatically affect its classification. Provided approved monitoring programs for the detection of any undetected residual TB infection are in place and measures for the containment and eradication of infection are effectively applied as per the SDRs, the State can continue to claim a TB-free status. All on-property and tracing activities are conducted under SDRs. Programs are first considered and approved by the TFAP Property Program Group and subsequently by the Chief Veterinary Officer of the State. In addition Queensland legislation provides the necessary legal underpinning to SDRs.

World Renderers' Conference

The Australian Renderers' Association convened the sixth World Renderers' Conference in the last week of July to explore the challenges and opportunities facing this industry. The industry's role in ensuring the safe recycling of animal byproducts has come under intense scrutiny in recent times as a result of the emergence of BSE in Europe. The conference covered hygienic rendering practices, product quality issues, and alternative uses for rendered byproducts such as the use of biodiesel.

Top Watch

Top Watch has been part of the Northern Australia Quarantine Strategy (NAQS) for almost 10 years and, as the name suggests, focuses on raising awareness of quarantine. The program encourages local communities, industry groups and visitors in northern Australia to report to quarantine officers unusual pests, disease occurrences and illegal landings by traditional fishing boats and cruising yachts.

NAQS, run by AQIS, aims to protect northern Australia, from Broome in the west to Cairns in the east, including the Torres Strait, from the entry of harmful pests, diseases and weeds.

FAR NORTH QUEENSLAND AND THE TORRES STRAIT

Top Watch has been very successful in far north Queensland and the Torres Strait, and there is a higher level of quarantine awareness among the local inhabitants than possibly anywhere else in the country. Former Australian and Canberra Raiders Rugby League captain, Mal Meninga, has been a central part of the Top Watch campaign in the Torres Strait and far north Queensland in recent years. His involvement encourages local communities to become part of the 'Top Watch Team' and report unusual pests and diseases to quarantine officers. Results of Top Watch activities in the region include:

- visits to communities and schools and development of school projects;
- an annual calendar for the Torres Strait that features local scenes and people, coupled with relevant quarantine information ;
- a quarterly NAQS newsletter to update key stakeholders about NAQS activities;
- airline ticket wallets and seat information sheets with maps of the Torres Strait quarantine zones and quarantine information;
- weekly radio broadcasts throughout the Torres Strait;
- a dedicated FM radio channel situated at strategic locations throughout Cape York Peninsula relaying quarantine information to 4WD tourists;
- quarantine awareness signs on all inhabited islands;
- visits by high profile sporting personalities; and
- talks and presentations by quarantine officers.

Other northern parts of Queensland are monitored by Northwatch, a program established by the Queensland Government.

NORTHERN TERRITORY AND WESTERN AUSTRALIA

The Top Watch campaign is also run in the Northern Territory (Darwin and surrounding coastal areas) and in Western Australia (Broome and surrounding coastal areas). Quarantine awareness activities in these areas have focused on educating communities, pastoralists and industry groups about the importance of quarantine to the environment and agricultural and livestock industries. Campaign activities in the region include:

- visits to remote communities and schools;
- a video aimed at schools on quarantine awareness, featuring Essendon footballer, Michael Long;
- radio and press coverage of quarantine issues; and
- NAQS displays/exhibits at agricultural and community shows.

RECENT INITIATIVES

A specialist communications consultancy was appointed to help NAQS develop a strategy to raise awareness among remote aboriginal communities. As a result, a liaison officer was recruited in Darwin to support public awareness initiatives targeting remote communities in the Northern Territory and Western Australia — two highly important yet difficult-to-reach groups for NAQS.

A network of 'junior quarantine officers' is proposed to encourage students in the upper primary school years in the Torres Strait to become active participants in quarantine. Officers from AQIS will approach primary schools in the region to invite students in grades 5, 6 and 7 to participate in this program.

Information brochures have been prepared for each of the key NAQS regions — Torres Strait, Cape York Peninsula, Western Australia and the Northern Territory. These describe the major exotic pest and disease risks for each region and highlight the roles various community members can play to help keep pests and diseases out of Australia. Additional fact sheets are planned for specific pests and diseases.

A series of pest and disease awareness posters has been produced to raise awareness of possible pest infestation and to encourage reporting of pests and diseases to quarantine officers.

Two videos about quarantine issues in Cape York Peninsula and the Torres Strait have been produced. The videos — *Protect our Island Home* and *Protect our Northern Home* — contain graphic footage of the effects of exotic plant and animal diseases accompanied by clear quarantine messages from local NAQS officers and agricultural industry representatives.

NEW MANUAL TO ASSIST RANGER TRAINING

Following the pioneering work done by Andrew Moss in training rangers in sample collection at post mortem examination, another Darwin-based NAQS veterinarian, Emma Watkins, has developed a pictorial manual to support the training of indigenous rangers in quarantine surveillance. The manual shows the step-by-step process for collecting blood samples from feral animals and how to conduct post mortem examinations to collect specimens for laboratory examination.

Field-testing of the manual in October at Gurrumuru outstation with the Dhimurru and Ramingining rangers was successful. The manual was well accepted, with comments on parts that needed rewording, and other suggestions for improvement, such as translating it into their own language.

Teaching the rangers these techniques benefits both NAQS and the aboriginal people. The rangers, with a comprehensive knowledge of their land and their continual observations of animal populations, are well placed to notice anything unusual. Because aboriginal rangers work in remote coastal areas, the information collected will have a broader geographical base, and the extra surveillance information will add greatly to that already collected by normal NAQS survey programs. The techniques outlined in the manual help the rangers manage their land since this type of surveillance forms a large part of feral animal management.

Contact: Sheree Glasson, NAQS PR, 02 6272 5151
sheree.glasson@aqis.gov.au

Screw-worm fly conference

The Department of Agriculture, Fisheries and Forestry — Australia has organised an international conference on screw-worm fly (SWF) in Canberra for November. The conference will review past research (including analysis of the outcomes of recent research on the sterile insect technique at the SWF test facility in Malaysia), coordinate stakeholder involvement, and develop recommendations for the future direction, management and funding of Australia's SWF preparedness strategy. Participation is expected from international agencies, Australian Commonwealth and State/Territory departments of agriculture, Research and Development Corporations, and representatives of livestock industries. A report of the conference will be in the next issue of *AHSQ*.

For further information contact Neil Tweddle (phone 02 6272 4509 or e-mail neil.tweddle@affa.gov.au).

State and Territory reports

New South Wales

Contributed by:
Barbara Moloney
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ANTHRAX

Six investigations into sudden deaths during the quarter were all negative for anthrax. Ketosis was diagnosed as the cause in one instance.

INCLUSION BODY DISEASE IN BOID SNAKES.

Suspected inclusion body disease (IBD) of boid snakes was diagnosed in two jungle pythons that were part of a collection seized by the National Parks and Wildlife Services from a reptile keeper in the lower Blue Mountains. The pythons became sick while held in quarantine at Taronga zoo. Examination of brain sections under the electron microscope showed the presence of virus particles consistent with type C retrovirus, the cause of IBD in boid snakes. In early July, for disease control purposes, the zoo euthanised the balance of the collection, which included exotic snakes.

REPRODUCTIVE LOSSES IN PIGS

Increased rates of perinatal mortalities, stillbirths and splay leg occurred in two pig herds on the north coast of NSW. Both were negative for porcine reproductive and respiratory syndrome (PRRS) viral isolation on tissues from affected piglets. Myofibrillar hypoplasia (congenital splay leg) was considered an alternative diagnosis for one herd.

BOVINE TUBERCULOSIS

All known cattle relating to the original infected Queensland herd (see page 9 and *AHSQ* Vol. 6 Nos. 1 and 2) have been slaughtered. Only short-term contact low risk cattle remain to be subjected to approved ongoing testing programs. Under the Standard Definitions and Rules of the Tuberculous Freedom Assurance Program, a State can continue to claim a TB-free status, provided approved monitoring programs for the detection of any residual TB infection are in place and approved measures for the containment and eradication of infection are effectively applied.

SUSPECT *LAMANEMA CHAVEZI* IN ALPACA

Extensive liver and epicardial abscesses were found by a post mortem examination of a young alpaca. The mother was reported to have died with similar gross lesions, but no further investigation was done. Microscopic examination of tissues from the young animal showed suspect helminth larvae within the liver abscesses. *Lamanema chavezi* is reported to be an important parasite of lamoids in South America, not previously reported outside that continent. Follow-up investigations of other alpaca on that property have not detected any unusually large embryonated eggs in the

Northern Territory

Contributed by:
Diana Pinch
NT DPIF

CATTLE

In August, an investigation of diarrhoea in weaners on a property in the Darwin region led to a differential diagnosis of plant toxicity from jarrah grass (*Digitaria milanjiana* cv. Jarra) or poisoning by an unknown breakdown product of pure sulphur. Yellow elemental sulphur, used in uranium processing, was dumped in the paddock about 10 years ago. Following removal of the weaners to another paddock, the diarrhoea resolved in two days and the weaners soon had a shine on their coats again. The sulphur heap was fenced off and 100 weaners were returned to the paddock of jarrah grass. There has been no sign of diarrhoea developing in the weaners grazing the jarrah grass with no access to the sulphur. Over the past few years the sulphur has turned to a white powder, which is difficult to analyse. It is not sulphur, sulphide or sulphate. Determination of the analysis of the powder is continuing.

There were two reports of tetanus during the quarter. In one case, a weaner died three weeks after branding at a Darwin region property. In the Katherine region, an animal that was down and hypersalivating was diagnosed as a clinical tetanus case.

Two heifers showing nervous signs and collapse in yards on a Barkly Tablelands property were diagnosed with caustic vine (*Sarcostemma* spp.) poisoning. There had also been sporadic deaths of other heifers. The plants have been removed to prevent future problems.

A case of 'fragile bone syndrome' was investigated in cattle on a property in the Katherine region. Seven of the 500 heifers were critically injured in the process of normal yard handling. Although the calcium content in the supplement for these 2- to 3-year-old heifers had been reduced from 15% to 3%, this was still within recommended ratios with phosphorus. A combination of factors could explain the effects: the area has received a series of above average wet seasons that may mean low phosphorus values in pasture, various paddock effects, shyfeeders and the high demands of

growth and pregnancy. Even with high levels of supplement intake, the estimated phosphorus intake was between 4 and 7 grams per day, compared to a requirement of 9 to 12 grams per day. The short-fall may not have been met by the forage, resulting in a phosphorus deficiency that is believed to have caused the extreme bone fragility.

Seven heifers that were brachycephalic and had joint abnormalities were drafted from the mob on a Gulf property. The cause is probably genetic, causing 'bulldog' craniums and overshot jaws. Stunted and thin, the heifers would probably not have survived the dry season off their mothers.

POULTRY

The deaths of 27-day-old pullets in a poultry shed occurred over a few days, with birds exhibiting signs of flaccid paralysis. Samples of live birds and dead birds were examined, and the mouse protection test, using serum, provided a diagnosis of botulism type C.

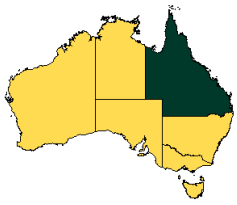
OTHER

Extension work on the dangers of swill-feeding in relation to spreading exotic disease has been a priority activity for Stock Inspectors this year. Rubbish dumps in areas inhabited by feral pigs, and properties raising pigs, have been visited to ensure that the pigs do not get any 'free meals'.

A 16-week-old Persian kitten was admitted to a veterinary clinic with severe fly strike. The maggots had invaded the fresh tissue of the abdomen and spine area. To eliminate the possibility that the strike was caused by exotic *Chrysomia bezziana* (screw-worm fly), deep and superficial larvae were removed for examination. The maggots were identified as *Lucilia sericata* and other *Lucilia* spp.

Queensland

Contributed by:
Janet Berry
QDPI



The quality of grazing pasture across the State seriously deteriorated during the quarter with digestibility, energy and protein content falling. This was reflected in some of the diseases that occurred. Nutritional deficiencies, plant toxicities and problems arising from supplementary feeding have all been reported.

FEEDING CRACKED LUPIN SEEDS

Due to the deteriorating grazing situation, cracked lupin seeds have been fed to stock in the west of the State. Lupins are generally considered to be a good feed with high protein content and high digestibility. On one property, there were 30 mortalities beginning about three days after feeding lupins to weaner cattle. One animal examined while still alive showed nervousness, high stepping gait, staggering, convulsions, and frothing at the mouth. On another property four rams died after being fed lupins. Fungal toxicity caused by *Phomopsis* species was first suspected. However, there was no liver damage and no jaundice. Another cause of death may have been contamination of the feed with wild varieties of lupins that can have a high content of alkaloids that are not usually found in the sweet cultivated species of lupins. Feed samples were tested and found to have a safe level of alkaloids.

NITRATE POISONING

After being fed bales of oaten hay for one day, 14 young growing cattle died suddenly on a property in the west. A few cattle being fed the same hay on other properties in the area also died. Analysis of a sample of hay found a concentration of 4% potassium nitrate on a dry matter basis. In the south-east of the State, nitrate poisoning caused the deaths of 14 cows fed sorghum hay at railway trucking yards during late August. That hay also had 4% potassium nitrate. Other hay from the same source had up to 6.45% potassium nitrate. In hays, levels as low as 1.5% potassium nitrate in dry matter are considered dangerous, whereas higher concentrations are tolerated in green feeds.

ARSENIC POISONING

Fourteen Brahman x Hereford steers, 18 months old, were found dead in the paddock in the west of the State. There was one affected animal still alive; it was weak and staggering, with a dark scour and nasal discharge. The deaths occurred close to a cluster of ruined buildings. Two heaps of suspicious powder were found amongst the ruins, and there was evidence that the cattle had been licking the powders. One of these powders had very high arsenic content. The owner had recently purchased the property and introduced cattle of an age where cattle are notoriously curious. Previous owners had kept sheep. The contaminated area was immediately fenced off to prevent further losses.

KETOSIS

Many beef herds in the south experienced cattle losses where ketosis was contributing to the cause of death. Up to 20 deaths occurred in one beef herd, with both cows and heifers becoming recumbent and dying. Declining nutrition and lactation stress both contributed to these deaths. Raised blood levels of 3-OH butyrate indicated a ketonaemia in many of the cases.

ZAMIA STAGGERS

Macrozamia spp. poisoning was confirmed on two properties in central Queensland. Cattle had access to

the plants and showed incoordination progressing to recumbency. One property, which has 4000 animals, lost 20 head, with a further 50 young Brahman cows affected. Histological changes in the brain and spinal cord were consistent with zamia staggers. Samples from cattle on both properties were negative for BSE.

ROCK FERN POISONING

Thirty-three 12-month-old Angus steers died and five more showed signs of poisoning on a property in the south. Affected animals were depressed and febrile with blood-stained saliva and faeces. Plant fragments in the rumen contents were sent to the Queensland Herbarium for identification. *Cheilanthes distans* (and possibly *sieberi*) fragments were detected. Anaemia, decreased platelet counts and hypocellularity of the bone marrow were found in the animals autopsied, findings that are consistent with rock fern poisoning.

BLUE GREEN ALGAE

Cylindrospermopsis poisoning from a type of blue-green algae was responsible for the deaths of seven weaners, with a further six animals affected on a property in central Queensland. Affected cattle showed depression and recumbency before dying. They had evidence of severe liver disease with extremely distended gall bladders (four to five times normal size) being the most prominent finding from post mortem examination. The algae were hard to see in the dam from which the cattle were drinking. There was some cloudiness and the water was slightly green, but there was no scum around the edge. *Cylindrospermopsis raciborskii* is a widespread organism in freshwater in Queensland and blooms of the organism are relatively frequent although not as obvious as those caused by the other common freshwater hepatotoxic algal species. This is because *C. raciborskii* is broadly distributed throughout the water column at various depths. There is a low risk of toxin residues in cattle that drink water contaminated with *C. raciborskii* without showing any clinical signs of toxicity.

NEOSPORA IN CATTLE

Neospora caninum infection was confirmed on a property on the coast. Production losses between pregnancy testing to branding of around 10% had previously been diagnosed as due to trichomoniasis. By culling infected bulls, sound reproductive management and supplementation for phosphorus on the forest country property where breeders are being run, pregnancy rates began to improve but losses from pregnancy testing to branding continued. An aborted foetus was submitted and found to have lesions in the brain typical of *Neospora caninum*. Serological testing of the dam showed she was seropositive to *Neospora caninum*. A total of 9 of 25 cows sampled at random were seropositive. It is therefore likely that *Neospora* is contributing to a proportion of the reproductive losses on this property. Serological surveys of dairy cattle in the north and beef cattle in central Queensland have shown that infection with *Neosporum caninum* is widespread and that seropositive cows have an abortion rate three to four times higher than seronegative animals.

EQUINE INFECTIOUS ANAEMIA

Equine infectious anaemia (EIA) was diagnosed on five properties in the south west of the State and one on Cape York Peninsula. Computer records show only two previous cases of EIA on the Peninsula. EIA is a notifiable disease in Queensland. Although there is no State disease control program, reporting is required for export certification purposes. Advice is given to horse owners on the diagnosis and means of control of the disease.

WASTING IN HORSES

Two cases of chronic wasting in horses were investigated. The first was a two-year-old thoroughbred with a two month history of chronic weight loss, the second a four-year-old quarterhorse with five months of weight loss following castration. The thoroughbred had multifocal thickening of the small intestinal mucosa and the quarterhorse had a diffuse nodular thickening of the colon and localised lymphadenopathy. The lesions in the thoroughbred were intestinal lymphomas. The quarterhorse had a marked diffuse granulomatous colitis, lymphadenitis and mild hepatitis. Acid-fast bacilli were present throughout and mycobacteriosis was diagnosed. A mycobacterium has been isolated and samples have been referred to the Mycobacteriology reference laboratory in Perth. Initial growth characteristics suggest it is not *M. paratuberculosis*.

INFECTIOUS LARYNGOTRACHEITIS

Infectious laryngotracheitis (ILT) infection was diagnosed in two small non-commercial poultry flocks during late July. The birds were showing ocular-nasal discharges and respiratory distress. At autopsy, the trachea in all birds had varying degrees of a subacute necrotising tracheitis. ILT virus was isolated. Apart from a few coccidia in duodenal sections, no other significant changes were noted. Both flocks were quarantined while vaccination of the flocks occurred and in both flocks no further cases were experienced. In each case, the source of the ILT infection was unable to be determined.

TOXOPLASMOSIS IN DOLPHINS

Toxoplasma gondii was the cause of death in a hump-back dolphin found in the Gladstone area. Nonsuppurative encephalitis was present, Toxoplasma-like cysts observed and *T. gondii* confirmed by

immunostaining. Another dolphin in Townsville showed extensive encephalomalacia due to *T. gondii*. This is a parasite of terrestrial animals and the source of infection for marine animals is unknown.

ERYSIPELAS IN EMUS

Erysipelothrix rhusiopathiae was found to be responsible for the deaths of 30 nine-week-old emus in early July. About 300 birds were kept on the property. The weather was cold and they were on supplementary feeding. The birds showed general lethargy before sitting down and dying. *E. rhusiopathiae* was obtained in pure, heavy growth from all tissue samples.

South Australia

Contributed by:
John Weaver
PISA

OVINE JOHNE'S DISEASE

There are three known foci of ovine Johne's disease in South Australia. The major one is on Kangaroo Island where more than 40 properties are known to be have been infected. The second, in the south-east around Millicent, involves 11 properties and can be traced mainly to one stud. The third is the unusual pocket of cattle strain in sheep in the mid-north near Burra in association with infection in a feral deer population.

LIVER DAMAGE AND PHOTOSENSITISATION

Sporadic cases of liver damage in both sheep and cattle were reported from a number of the developed agricultural areas of the state. Some presented as sudden death, while others were originally detected through acute or chronic photosensitisation. The most severe was in a Guernsey herd of 360 cattle where 15 died, 25 were culled and about another 100 had typical skin damage. Those in the southern areas were suspected to be sporidesmin toxicity, while those from drier country were often associated with grazing pastures with known hepatotoxic plants.

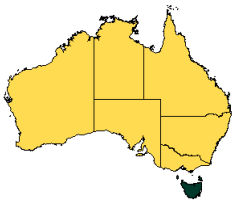
NEUROLOGICAL DISEASE IN YELLOW-TAIL KINGFISH

Seventy-day-old yellow-tail kingfish larvae exhibited incoordination. Histological examination found lesions in the brain and spinal cord, similar to but varying from those seen in nodavirus infection. They tested negative for nodavirus and the investigation is continuing.

CONSOLIDATING PNEUMONIA IN BARBARY SHEEP

A colony of Barbary sheep at an open plains zoo had two animals die over the past year with a pulmonary consolidation. Reports from other countries suggest that Barbary sheep may be prone to maedi–visna and although the histology has been similar, both animals were negative on tests for this disease.

Tasmania



Contributed by:
John Elliott
DPIWE, Tasmania

ERYSIPELOTHRIX RHUSIOPATHIAE IN POULTRY

A serious problem with soft-shelled eggs and loss of production was reported in a layer flock. Examination of two birds revealed indications of bacterial infection. *Erysipelothrix rhusiopathiae* was isolated from both birds. The problem resolved after treatment with erythromycin.

DIARRHOEA AND DEATHS IN CALVES

Diarrhoea and deaths of neonatal or young calves occurred in several herds. Profuse growth of non-haemolytic *Escherichia coli* and histological findings supported a diagnosis of colibacillosis. Cultures have been sent for strain typing.

ILL-THRIFT IN SHEEP

Ill-thrift and deaths in six flocks were due to severe worm infestation. In one flock in which three sheep died suddenly, total worm counts were in excess of 50 000. In a second flock, in which about 30 ewes had died during lambing, autopsy of one ewe revealed fascioliasis and nematode counts of up to 40 000 worms. In the third flock, because of an on-going problem with diarrhoea, yersiniosis was suspected, so five sheep were submitted for detailed examination. This also found very high worm counts (up to 40 000). In the fourth flock, high faecal egg counts confirmed gastrointestinal nematodiasis, but in addition *Yersinia enterocolitica* was isolated from the intestine. In a fifth flock, eight ewes of 400 were sick or dead. The total worm count was 37 000. No other cause was found. In the sixth flock, 400 out of a flock of 5000 were affected. The worm count was 97 000, with no other significant findings.

VIBRIONIC ABORTIONS

Late-pregnancy abortions in sheep were reported from three flocks. On autopsy, foetal hepatic necrosis was found in one flock. In the other two flocks, inflammatory changes and/or emboli were found in placental material. Campylobacter infection can produce these changes. *Campylobacter jejuni* was found in aborted material from all three flocks.

ABORTIONS IN GOATS

Foetuses were submitted from two does that aborted in a flock of 35. The most striking feature on autopsy was extreme bilateral enlargement of the thyroid glands. Diffuse hyperplastic goitre was diagnosed. Congenital hypothyroidism is almost exclusively hyperplastic. Causes may be iodine deficiency, iodine excess, goitrogenic compounds such as sulphonamides, plants of the brassica family or a hereditary recessive defect. Iodine deficiency goitre is common in both humans and animals in Tasmania.

POLIOENCEPHALOMALACIA IN CALVES

Signs of central nervous system disturbance were seen over one week in eight of 150 calves on one property. One calf partially recovered after treatment with thiamine and tetracyclines. In the brain, there was marked vacuolation in the cortex, oedema and infiltration of macrophages beneath the leptomeninges and around some blood vessels. No other abnormalities were found. Moderate multifocal polio-encephalomalacia was diagnosed.

MORTALITY IN CHICKENS

Over seven days, 4% mortality was reported in a batch of two-week-old chickens in a large commercial layer flock. Necrotic splenitis, pneumonia, myocarditis and serositis were found on post mortem examination. These changes suggested bacterial septicaemia. Coliforms were cultured from several birds.

IONOPHORE TOXICITY IN TURKEYS

Twenty birds in a flock of 800 died overnight. More were lost over the next two days. Two birds were sent to the laboratory. The main histopathological abnormality was extensive skeletal myolysis, which is consistent with ionophore toxicity.

YERSINIOSIS IN SHEEP

In a mob of about 1000, 20 sheep had become ill or died over one month, often with a bloody diarrhoea. The mob was starting to develop a 'tail' of unthrifty animals. The sheep had been drenched and treated with selenium and had access to good pasture. Extensive patches of microabscesses in the lamina propria were scattered through the gut. These contained bacterial colonies and were often associated with ulcers in the mucosa. *Yersinia pseudotuberculosis* was cultured.

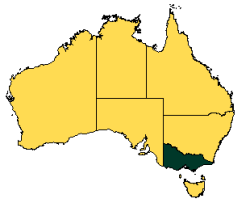
NOTIFIABLE DISEASES

During the quarter, there were 790 laboratory accessions (31% cattle, 27% sheep and 16% aquatic animals). There were 7986 specimens submitted with these accessions (29% blood, 19% faeces/ingesta and 18% live animal). The following table summarises laboratory accessions for notifiable diseases in Tasmania.

Disease / Species	Animals Tested	Accessions Number	Positive
Brucella ovis			
Exotic	9	1	0
Ovine	117	21	1
Hydatids			
Ovine	3	3	0
Johne's Disease			
Bovine	1077	27	2
Caprine	2	1	0
Ovine	26	9	1
Leptospirosis			
Bovine	14	4	1
Canine	1	1	0
Human	3	3	0
Porcine	1	1	0
Q Fever			
Ovine	5	2	0
Salmonellosis			
Avian	91	8	0
Bovine	115	48	0
Caprine	2	2	0
Equine	1	1	0
Ovine	29	14	0
Wildlife	12	7	0
Verotoxic *E. coli*			
Bovine	5	1	1

Victoria

Contributed by:
Tristan Jubb
DNRE, Victoria



INVESTIGATIONS OF SUSPECTED FOOT-AND-MOUTH DISEASE

Of the number of investigations in which foot-and-mouth disease was considered as a differential diagnosis, two are of note. A farmer on the Mornington Peninsula observed salivation, muzzle lesions and wild temperament in 130 Hereford heifers the day after mustering. A visit by a Departmental veterinarian and the owner's private veterinarian confirmed that the heifers were indeed wild (mustered the previous day by helicopter) and two or three were salivating excessively. None of the heifers was listless or limping. Closer inspection detected no inner mouth lesions and the highest temperature recorded in any of the cattle was 39.5C. The muzzle lesions, rather than being filled with clear fluid, were filled with red fluid suggestive of injury. Reddening around the eyelids was also noted. A diagnosis of diet-induced photosensitisation was made.

A second FMD investigation was conducted on a young Hereford steer about 12- to 16-months old that was observed with signs suggestive of FMD. The

animal was salivating excessively, licking its nostrils and had what appeared to be blister-like lesions on the muzzle. It had been chronically ill and had not responded to treatment. All other animals on the property were in good health. An autopsy of the animal found that all four feet had interdigital lesions but that there were no oral lesions or other significant findings. Specimens were sent to the Australian Animal Health Laboratory (AAHL) where FMD was ruled out and the clinical diagnosis of mucosal disease confirmed.

ANTHRAX INVESTIGATION

There was one anthrax investigation on a property at Cardinia on which one 10-month-old Angus steer had died suddenly out of 55 cattle. The owner contacted a knackery for the carcase to be collected, but the knackery owner was concerned that, because there were bloody discharges from the orifices, anthrax should be excluded before the carcase was collected. An NRE officer investigated and found the carcase in a state of advanced decomposition. There was copious bloody discharge from the anus, nostrils, uppermost eye and one of the teats. There was no evidence of struggling before death. All other cattle were in good health. Specimens submitted for laboratory examination were negative for *Bacillus anthracis*; death was attributed to clostridial disease.

COPPER POISONING ASSOCIATED WITH HELIOTROPE INGESTION IN SHEEP

A flock owner reported many ewes dying suddenly over three to four months in his flock of crossbred and Tukidale ewes. Most were simply found dead, but those showing signs prior to death were puffing when moved, then trembled, lay down and died within two hours. Approximately 30 of 600 Tukidales had died. A mob of 600 crossbred ewes, which rotated around the same pastures, but didn't graze with the Tukidales, experienced no losses. All deaths were in sheep older than 18 months. Ewes were in fat condition and on lush subclover pasture. All ewes had a history of access to heliotrope. Autopsy of two ewes found yellowing of internal surfaces, an orange friable liver, grey–black kidneys, and port wine coloured urine. A diagnosis of classical heliotrope poisoning with copper accumulation and a haemolytic crisis was made. Advice was given to move the sheep quietly off the subterranean clover onto grass, to eliminate stresses, and not to starve them.

SUSPECT SALMONELLOSIS IN LAMBS

A large number of deaths (67 of 450) occurred over a week in 6- to 9-month-old merino lambs grazing improved pasture with access to a growing oat crop. Numerous sick lambs were present and were easily recognised by their hunched posture and severe watery scour. Changes observed at post mortem examination included severe dehydration, and intestinal mucosal congestion but no obvious mucosal stripping. Two lambs had distended gallbladders with thickened walls and strands of fibrin and mucosa present in the lumen. *Salmonellae* were not cultured but histological changes consistent with salmonellosis were found. Significant numbers of abomasal and intestinal worms were found by a total worm count and this probably contributed to the stress needed to set off the outbreak. Another factor was the lambs' reluctance to eat the oat crop. They preferred grazing clover and grass along a creek through the middle of the oat crop and only reluctantly ate the oats when the clover had disappeared.

PHOTOSENSITISATION IN SHEEP

Several outbreaks of severe facial photosensitisation and deaths were recorded in the north of the State during the quarter. These were associated with the grazing of heliotrope over the past two seasons leading to marked liver distortion and failure. There was no associated copper poisoning or jaundice in these cases.

CRYPTOSPORIDIOSIS IN CALVES

In late August, an outbreak of acute diarrhoea and death in calves was investigated near Bairnsdale in East Gippsland. The syndrome occurred in 5- to 15-day-old Angus calves in a group of 70 cows and calves. Five calves died despite treatment with oxytetracycline. The clinical signs were acute depression, mild dehydration and a foul-smelling 'porridge-like' diarrhoea followed by death within 24 hours. Faecal examination using modified Ziehl Neelson stain demonstrated large numbers of *Cryptosporidia*. This disease in calves is usually relatively unresponsive to treatment but only occasionally results in deaths. The existence of other intestinal pathogens, such as rotavirus or coronavirus and stress related to the herd grazing a paddock that was very wet following major rain, probably contributed to the high mortality in this outbreak.

ILLNESS IN CLYDESDALE HORSES

The Royal Agricultural Society of Victoria and the Department of Natural Resources and Environment are investigating the death of a Clydesdale stallion in Gippsland in October following its attendance at the Royal Melbourne Show, some three weeks previously. The owner of the dead horse expressed concern that its death might be linked to illness that occurred in some of the other 130 Clydesdale horses that attended the Show. Discussions with veterinarians who attended sick horses during and following the show indicate that an infectious agent may have been circulating in the Clydesdale pavilion during the show. Reports suggest up to 12 Clydesdale horses (all from Victoria and all stabled in one barn) have become ill, although only four of these have conditions resembling those

displayed by the stallion that died. Affected horses initially showed signs of depression, high fever and respiratory disease followed by muscle stiffness a few days later. Blood tests on six horses revealed that affected animals had extremely high levels of muscle enzymes indicating that muscle damage had occurred. All but one of these horses is recovering. Confirmed reports to date have been confined to Clydesdales and anecdotal evidence suggests that the condition is not new. Two similar cases have been seen in Clydesdales during the past two years. There is no evidence of an exotic or notifiable disease involved in this incident. Testing has ruled out a variety of endemic and exotic diseases including equine viral arteritis, Ross River virus, flaviviruses, herpesvirus, rhinovirus and equine influenza. The time elapsed since the show makes it possible that a definitive diagnosis will not be achieved. Circulation of respiratory diseases in particular is not uncommon at events where horses congregate. The incident highlights the importance of best health practice by horse owners at, and returning from, shows and other horse meetings.

OTHER HORSE DISEASES

An abortion of a thoroughbred mare from equine herpesvirus 1 occurred on the same premises at which another mare aborted in June 2001. There were scattered reports of strangles including one of an outbreak in a provincial thoroughbred racing stable.

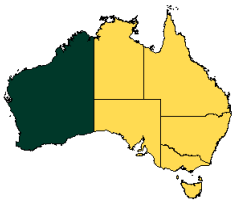
Equine influenza was ruled out by paired serology in a horse imported from Hong Kong with a fluctuating fever during post-arrival quarantine. There was neither fever nor respiratory signs in other horses in the consignment. Subsequent investigation revealed that the horse had a large abscess in the thoracic cavity.

Reports were received in the northern irrigation region of four horses on three different properties that had high titres to Ross River virus.

A *BABESIA*-LIKE ORGANISM IN DOGS

Two nine-month-old bull terrier pups were presented to a veterinary practice with lethargy, mild abdominal pain, splenomegaly and pale mucous membranes. Blood examinations revealed anaemia, with spherocytosis consistent with immune-mediated red cell destruction and small to moderate numbers of erythrocytic parasites. The parasites had a ring-like configuration, similar to that described for *Haemobartonella* or *Cytauxzoon*, but not typical for the usual red cell parasites recognised in Australia (*Haemobartonella canis* and *Babesia canis*). Immunosuppressive therapy and a course of tetracycline antibiotics led to clinical recovery although small numbers of organisms remain. Electron microroscopy revealed nothing apart from a few red blood cell membrane defects. Serum submitted to the Australian Animal Health Laboratory was negative for *Erhlichia canis* antibodies. DNA studies at Murdoch University revealed that the organisms had a DNA sequence closely resembling that of *Babesia gibsoni*. The DNA sequence has apparently been confirmed in samples sent to the University of North Carolina. The family of dogs has no recent history of travel or importation. Further investigation is continuing. Tick-borne diseases are rare in Victoria.

Western Australia



Contributed by:
Richard Norris
WA Department of Agriculture

Laboratory testing was conducted on 461 investigations of animal disease during the quarter. Of these, 94 were cost-recovery (private benefit) cases and 367 were charge-exempt (public benefit and therefore funded directly by the Government). There were three exotic disease alerts, 26 notifiable diseases reported and two new diseases investigated during the quarter.

NOTIFIABLE DISEASES

Ovine Johne's disease (OJD, classified as a category A (ii) disease — exotic to WA but not Australia) was confirmed in a Corriedale ram at Gidgiegannup. The animal had originated from an interstate property (which was subsequently placed in quarantine for OJD). This was a case of paucibacillary OJD where lesions were mild and acid fast organisms were extremely rare in tissue sections. Confirmation required culture and DNA testing. Independent confirmation of the diagnosis was provided by the JD Reference Laboratory at VIAS in Victoria.

A category B disease (mandatory quarantine) was recorded with the discovery of cattle tick in the Pilbara.

There were 24 category C (mandatory notification, discretionary quarantine) notifiable diseases reported during the quarter. There were eight reports of mucosal disease in cattle. Three cases of infertility associated with bovine genital campylobacteriosis were seen. Annual ryegrass toxicity was reported in a research facility in the metropolitan area and sheep feed at another city-based research facility was also found to be toxic. Fowl cholera was diagnosed three times, once in the outer metropolitan area and twice in the southern region. Malignant catarrhal fever occurred twice in the central region. There were single reports of listeriosis in sheep at Kojonup, *Brucella ovis* infection in rams at

Dandaragan, and lyssavirus in bats at Broome. Echinococcosis was seen in abattoir specimens in sheep from Esperance and in kangaroos dressed at a Cannington plant. The kangaroos were taken from the south-west and central regions and the diagnoses were made at Murdoch University.

SUSPECT FOOT-AND-MOUTH DISEASE

Following a referral from a private veterinary practitioner, a case of suspect FMD was investigated on a property at Denmark on the south coast. Two steers had ulcers in the mouth and tongue. Exotic disease suspicion was intensified due to the recent return of the owners from Zimbabwe, a country that had since announced a fresh outbreak of FMD. Specific testing at AAHL excluded FMD from the diagnosis. The illness was subsequently shown to be mucosal disease through testing conducted at the State animal health laboratory in South Perth.

SHEEP POX EXCLUDED

Tissue samples from unusual proliferative lesions on the gums of newborn lambs at Beverly were extensively examined for the presence of viruses, including sheep pox. The lesions resolved in a few weeks and the animals suffered no further illness. Electron microscopy successfully illustrated the presence of orf (contagious ecthyma) viral particles in preparations made from the lesions

CATTLE TICK FOUND IN THE PILBARA

Cattle ticks (*Boophilus microplus*) were identified on cattle at two locations in the Pilbara. There is no indication that the ticks have spread. National Standard Definitions and Rules are being followed and Pilbara station owners are keen to report and treat to eradicate the pest. Surveillance was increased on high risk properties and at abattoirs.

AUSTRALIAN BAT LYSSAVIRUS

Australian bat lyssavirus was found in specimens collected at Broome in July. Virus was identified at AAHL, using fluorescent antibody, Polymerase chain reaction and viral isolation in the brains of two species of bats: *Pteropus scapularis* (little red flying fox) and *P. alecto* (black flying fox). Although antibody has been found in West Australian bats previously, this is the first confirmation that the virus is present in the State.

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 1.

Table 1: Serological testing from routine submissions to State and Territory laboratories

	Akabane		Bluetongue		Bovine ephemeral fever		Enzootic bovine leucosis		Equine infectious anaemia		Equine viral arteritis	
	Tests	+ve	Tests	+ve	Tests	+ve	Tests	+ve	Tests	+ve	Tests	+ve
Jul–Sep 00	1093	255	4707	654	1596	434	6744	0	1697	11	779	18
Oct–Dec 00	1646	370	5552	393	1937	266	511	0	742	10	388	30
Jan–Mar 01	1143	457	8588	285	1183	182	10812	2	872	11	328	32
Apr–Jun 01	4240	707	11631	443	3151	286	17340	9	1205	11	398	1
Jul–Sep 01	1971	318	7853	303	2130	300	10268	0	1268	27	370	5
NSW	29	1	515	5	14	1	145	0	471	0	164	1
NT	642	83	690	154	736	127	0	0	2	0	0	0
QLD	406	177	4638	110	376	145	78	0	404	27	3	0
SA	2	0	96	0	2	0	0	0	36	0	1	0
TAS	9	0	11	0	0	0	3	0	1	0	0	0
VIC	375	0	972	0	75	0	302	0	269	0	154	4
WA	508	57	931	34	927	27	9740	0	85	0	48	0

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 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 2 shows the number of herds and flocks known to be infected. A National Ovine Johne's Disease Control and Evaluation Program will be completed in 2003. Programs for bovine Johne's disease are currently being developed. 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 3

Information about components of the National JD Control Program can be obtained from State coordinators and Animal Health Australia's JD coordinators, David Kennedy 02 6365 6016 or Bruce Allworth 02 6036 9233. Lists of beef, dairy and alpaca herds and sheep flocks assessed in the Market Assurance Programs are available on the internet (at http://www.aahc.com.au/jdmap).

Table 2: Herds/flocks with a JDMAP status of at least MN1/TN1 status at 30 September 2001

STATE	Cattle	Sheep	Goats	Alpacas	Total
NSW	962	348	41	96	1447
NT#	0	0	0	0	0
QLD#	0	8	0	0	8
SA	207	228	6	36	477
TAS	108	34	2	0	144
VIC	249	143	5	31	428
WA#	0	0	0	0	0
AUS	1526	761	54	163	2504

Herds/flocks in Free or Protected Zones have a status of MN1 or better because of the zone status.

Table 3: Herds/flocks with JD at 30 September 2001

STATE	Cattle	Sheep	Goats	Deer	Alpaca	Total
NSW	165	769	5	0	0	939
NT	0	0	0	0	0	0
QLD #	1	0	0	0	0	1
SA	44	47	0	1	0	92
TAS	15	21	3	0	0	39
VIC	1143	23	9	4	4	1183
WA	0	0	0	0	0	0
AUS	1368	860	17	5	4	2254

The herds in Queensland are in quarantine in response to finding an infected animal introduced from an endemic area.

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. The results of recent brucellosis surveillance are shown in Table 4.

Table 4: Surveillance for bovine brucellosis

	Abortion Investigations		Test for other reasons	
	Tests	+ve	Tests	+ve
Jul–Sep 00	336	0	9569	0
Oct–Dec 00	155	0	1292	0
Jan–Mar 01	139	0	9100	0
Apr–Jun 01	262	0	13325	0
Jul–Sep 01	181	0	11995	0
NSW	17	0	150	0
NT	0	0	199	0
QLD	126	0	958	0
SA	1	0	23	0
TAS	5	0	11	0
VIC	1	0	125	0
WA	31	0	10529	0

ENZOOTIC BOVINE LEUCOSIS

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

Table 5: Dairy herds tested free of enzootic bovine leucosis at 30 September 2001

	NSW	NT	QLD	SA	TAS	VIC	WA	AUS
Free	1377	0	1353	640	679	7874	360	12 283
Herds	1398	0	1363	642	741	8017	360	12 521

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

Table 6: Ovine brucellosis accredited-free flocks at 30 September 2001

NSW	NT	QLD	SA	TAS	VIC	WA	AUS
1225	0	67	476	126	683	86	2663

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. A summary of activity resulting from the detection of TB on two Queensland properties last year is on page 6.

Table 7: Results of the National Granuloma Submission Program

	Granulomas submitted	TB +ve
Jul–Sep 00	1200	1
Oct–Dec 00	1158	1
Jan–Mar 01	981	0
Apr–Jun 01	1240	0
Jul–Sep 01	1500	0
NSW	247	0
NT	2	0
QLD	781	0
SA	116	0
TAS	30	0
VIC	111	0
WA	213	0

Surveillance activities

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 six important zoonoses is submitted to NAHIS each quarter — see Table 8.

The list of human diseases that are reportable to NNDSS has been updated. For zoonoses, data on hydatid disease will no longer be collected. Data on human cases of anthrax, Murray Valley encephalitis (MVE), Kunjin virus infection, cryptosporidiosis, and Australian bat lyssavirus will be added to the NNDSS database.

Contact: Communicable Diseases Intelligence, Australian Department of Health and Aged Care
(Internet address: http://www.health.gov.au/pubhlth/cdi/cdihtml.htm)

Table 8: Notifications of zoonotic diseases in humans

Disease	Q3-00	Q4-00	Q1-01	Q2-01	Q3-01	Current quarter							
					AUST	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Brucellosis#	7	11	7	2	5	0	0	0	5	0	0	0	0
Hydatidosis	6	8	11	4	4	0	nn	0	1	0	0	0	3
Leptospirosis	34	62	90	67	59	0	19	0	29	2	0	9	0
Listeriosis	0	14	22	6	11	1	1	0	3	2	2	2	0
Ornithosis	23	40	31	27	35	0	14	1	nn	4	0	14	2
Q fever	147	131	193	212	142	0	36	0	80	3	2	16	5

nn disease is not notifiable in these States

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

NATIONAL TSE SURVEILLENCE PROGRAM

The Office International des Epizooties (OIE) International Animal Health Code requires that countries (such as Australia) claiming to be free of transmissible spongiform encephalopathies (TSEs) have in place a surveillance system to detect BSE and scrapie should they occur. The National TSE Surveillance Program (NTSESP) is an integrated national program jointly funded by industry and governments to demonstrate Australia's ongoing freedom from BSE and scrapie, and to provide early detection of these diseases should they occur. Table 9 summarises the activity of the program over the past five quarters. Specimens from a small number of animals were unsuitable for testing. All specimens tested were negative for TSEs. Information about NTSESP is available on the internet (at http://www.aahc.com.au/surveillance/ntsesp).

Contact: Chris Baldock, Animal Health Australia's NTSESP National Coordinator

Table 9: Number of animals tested under NTSESP (All were negative for TSE)

	Jul – Sep 00		Oct – Dec 00		Jan – Mar 01		Apr – Jun 01		Jul – Sep 01	
	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep
NSW	73	30	40	63	25	22	37	36	38	30
NT	15	0	3	0	6	0	1	0	3	0
QLD	51	16	76	5	41	14	52	7	74	19
SA	3	8	11	44	9	9	1	12	5	14
TAS	2	4	11	5	2	5	3	1	3	2
VIC	54	45	18	18	9	14	45	25	30	38
WA	11	28	19	61	12	37	2	34	14	31
AUS	209	131	178	196	104	101	141	115	167	134

NORTHERN AUSTRALIA QUARANTINE STRATEGY

In recognition of the special quarantine risks associated with Australia's sparsely populated northern coastline, the Australia Quarantine Inspection Service 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. In addition to both offshore and onshore surveys, NAQS activities in Australia include sentinel herd monitoring and insect trapping programs to provide information about the time of any disease incursion.

Table 10 summarises recent NAQS activity. Table 11 shows the number of times that the insect trap sites were inspected during a quarter for both screw-worm fly (NAQS) and for screw-worm fly, Asian bees and bee parasites (AQIS Port Surveillance program).

Contact: David Banks, Biosecurity Australia

Table 10: Summary of recent NAQS activity

	Apr – Jun 00		Jul – Sep 00		Oct – Dec 00		Jan – Mar 01		Apr – Jun 01		Notes
	Tested	+ve	Tested	+ve	Tested	+ve	Tested	+ve	Tested	+ve	
Aujeszky's disease	184	0	14	0	115	0	5	0	332	0	
Avian influenza	119	0	0	0	0	0	0	0	119	0	
Hog cholera	180	0	13	0	113	0	5	0	325	0	
Infectious bursal disease	92	0	0	0	0	0	0	0	92	0	
Japanese encephalitis	310	12	65	0	171	0	161	5	763	17	a
Newcastle disease	105	0	0	0	0	0	0	0	105	0	
Porcine reproductive and respiratory syndrome	180	0	13	0	119	0	5	0	331	0	
Surra	278	0	75	0	16	0	0	0	369	0	
Transmissible gastroenteritis	7	0	9	0	0	0	0	0	16	0	
Tropical canine pancytopaenia	0	0	13	0	0	0	0	0	13	0	

a 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 sentinel sites on islands in the Torres Strait, and for the first time on the mainland at the tip of Cape York Peninsula. During the first half of 2000, sentinel pigs seroconverted on the island of Badu, but no clinical cases were detected in humans or animals.

Table 11: Number of inspections of insect traps

	Jul – Sep 00		Oct – Dec 00		Jan – Mar 01		Apr – Jun 01		Jul – Sep 01		Notes
	Tested	+ve	Tested	+ve	Tested	+ve	Tested	+ve	Tested	+ve	
NAQS											
Screw-worm fly	110	0	118	0	67	0	25	0	12	0	
AQIS port surveillance											
Asian honeybee			28	0	24	0	23	0	30	0	
Screw-worm fly	36	0	36	0	44	0	42	0	35	0	

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 12 summarises *Salmonella* isolations from animals notified to NEPSS for the quarter.

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

Table 12: Salmonella notifications, 1 July to 30 September 2001

Serovars	avian	bovine	canine	equine	feline	ovine	porcine	other	Total
S. Bovismorbificans	0	40	2	1	1	2	1	1	48
S. Dublin	0	64	1	0	0	1	0	0	66
S. Infantis	0	1	0	0	0	0	1	0	2
S. Typhimurium	8	111	4	6	2	6	0	3	140
Other	1	34	7	2	2	0	55	12	113
Total	9	250	14	9	5	9	57	16	369

NATIONAL RESIDUE SURVEY

Of 3507 samples tested during the quarter for agricultural and veterinary chemicals, four (0.11 %) had residues above the maximum residue limit (MRL). The four residue detections above MRL were spread across the chemical classes. The detection for insecticide in beef was for bioresmethrin (BRM) at 0.073 mg/kg. A thorough investigation could not identify a contamination source. The detection was well below the temporary MRL of 0.5 mg/kg set by the National Registration Authority for Agricultural and Veterinary Chemicals. Investigations are continuing into an antibiotic detection in beef for dihydrostreptomycin.

A residue of 19-nortestosterone was detected in a feral, male horse. Since the concentration was consistent with endogenous levels of this hormone in stallions, no further action was necessary. The metal violation was due to a lead residue in an ostrich. Contamination was most likely due to the animal grazing around an old rubbish site and old shed buildings. Table 13 summarises the results for the quarter.

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

Contributed by: Peter Miller, National Residue Survey, AFFA

Table 13: National Residue Survey, 1 July to 30 September 2001
Each pair of figures gives the number of samples above either the maximum residue limit or the maximum permitted concentration and the number of samples tested.

	NSW		NT		QLD		SA		TAS		VIC		WA		AUS	
Anthelmintics																
cattle	0	78	0	1	0	118	0	4	0	6	0	30	0	6	0	243
pigs	0	10	0	0	0	14	0	6	0	0	0	8	0	2	0	40
sheep	0	28	0	0	0	10	0	2	0	1	0	10	0	3	0	54
other	0	19	0	1	0	8	0	10	0	0	0	4	0	1	0	43
Total	0	135	0	2	0	150	0	22	0	7	0	52	0	12	0	380
Antimicrobials																
cattle	0	88	0	7	0	141	0	17	0	6	1	48	0	12	1	319
pigs	0	101	0	0	0	55	0	51	0	5	0	100	0	55	0	367
poultry	0	2	0	0	0	2	0	1	0	0	0	0	0	17	0	22
sheep	0	36	0	0	0	8	0	5	0	2	0	14	0	3	0	68
other	0	18	0	1	0	21	0	14	0	0	0	7	0	5	0	66
Total	0	245	0	8	0	227	0	88	0	13	1	169	0	92	1	842
Growth promotants																
cattle	0	128	0	3	0	181	0	20	0	13	0	64	0	12	0	421
pigs	0	16	0	0	0	22	0	13	0	1	0	18	0	9	0	79
poultry	0	1	0	0	0	2	0	0	0	0	0	0	0	2	0	5
sheep	0	27	0	0	0	7	0	2	0	0	0	19	0	2	0	57
other	0	10	2	2	0	15	0	9	0	0	0	6	0	2	2	44
Total	0	182	2	5	0	227	0	44	0	14	0	107	0	27	2	606
Insecticides																
cattle	0	350	0	16	1	437	0	38	0	28	0	130	0	10	1	1009
pigs	0	22	0	0	0	11	0	9	0	1	0	21	0	9	0	73
poultry	0	2	0	0	0	6	0	2	0	0	0	0	0	12	0	22
sheep	0	24	0	0	0	8	0	3	0	1	0	8	0	7	0	51
other	0	34	0	7	0	32	0	14	0	0	0	10	0	1	0	98
Total	0	432	0	23	1	494	0	66	0	30	0	169	0	39	1	1253
Metals																
cattle	0	20	0	1	0	44	0	5	0	1	0	8	0	3	0	82
pigs	0	9	0	0	0	6	0	11	0	1	0	9	0	2	0	38
poultry	0	1	0	0	0	5	0	1	0	0	0	0	0	6	0	13
sheep	0	10	0	0	0	5	0	1	0	0	0	8	0	4	0	28
other	0	9	0	3	0	11	1	7	0	0	0	4	0	2	1	36
Total	0	49	0	4	0	71	1	25	0	2	0	29	0	17	1	197
Miscellaneous																
cattle	0	24	0	0	0	40	0	1	0	3	0	7	0	1	0	76
pigs	0	7	0	1	0	8	0	8	0	0	0	10	0	2	0	36
sheep	0	9	0	0	0	5	0	2	0	0	0	7	0	5	0	28
other	0	11	0	2	0	20	0	2	0	0	0	1	0	0	0	36
Total	0	51	0	3	0	73	0	13	0	3	0	25	0	8	0	176

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. Dairy Food Safety Victoria coordinates the AMRA Survey 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. All positive samples are investigated by the relevant State or Territory dairy authority. Residues detected in this Survey are reported against the Australian Maximum Residue Limits (MRLs). Table 14 summarises the results for the quarter.

For further information contact: Kelly Long (AMRA Survey Coordinator), Dairy Food Safety Victoria, phone 03 9426 5999; fax 03 9427 1895; e-mail klong@dairysafe.vic.gov.au

Table 14: Australian Milk Residue Analysis Survey, July – September 2001
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	
Antimicrobials	0	16	0	0	0	4	0	6	0	5	0	62	0	3	0	96
Cadmium	0	3	0	0	0	0	0	2	0	2	0	15	0	1	0	23
Lead	0	3	0	0	0	0	0	2	0	2	0	15	0	1	0	23
Mercury	0	3	0	0	0	0	0	2	0	2	0	15	0	1	0	23
Organochlorines	0	4	0	0	0	0	0	2	0	2	0	15	0	1	0	24
Organophosphates	0	4	0	0	0	0	0	2	0	2	0	15	0	1	0	24
PCBs	0	4	0	0	0	0	0	2	0	2	0	15	0	1	0	24
Synthetic pyrethroids	0	4	0	0	0	0	0	2	0	2	0	15	0	1	0	24
Triclabendazole	0	16	0	0	0	4	0	6	0	5	0	62	0	3	0	96

SUSPECT EXOTIC OR EMERGENCY DISEASE INVESTIGATIONS

There were 39 investigations of diseases suspected to be either exotic or a possible emergency reported during the quarter, as shown in Table 15.

Table 15: Exotic or emergency disease investigations reported during 1 July to 30 September 2001

Disease	Species	State	Date	Response	Finding
Australian bat lyssavirus	fauna	WA	Aug	3	negative for ABL/Hendra
Anthrax	bovine	VIC	Sep	2	clostridial infection
Anthrax	bovine	VIC	Sep	2	clostridial infection
Anthrax	bovine	VIC	Aug	2	septicaemia
Anthrax	bovine	QLD	Jul	2	plant poisoning
Anthrax	bovine	VIC	Jul	1	toxaemic *E. coli* mastitis
Avian influenza	avian	VIC	Sep	2	*Pasteurella* septicaemia
Avian influenza	avian	NSW	Aug	2	starvation
Avian influenza	avian	NSW	Aug	2	Marek's disease
Avian influenza	avian	QLD	Aug	3	erypsipelas
Babesiosis (canine)	canine	VIC	Jul	4	*Babesia gibsoni*
Bluetongue	ovine	TAS	Sep	3	negative
Bovine brucellosis	bovine	VIC	Aug	2	poisoning
Bovine spongiform encephalopathy	bovine	WA	Sep	3	negative
Equine influenza (virus type A)	equine	VIC	Sep	3	lung abscess
Foot-and-mouth disease	bovine	VIC	Aug	1	photosensitisation
Foot-and-mouth disease	bovine	VIC	Aug	1	pestivirus

Continued overleaf

Table 15: Exotic or emergency disease investigations reported during 1 July to 30 September 2001

Disease	Species	State	Date	Response	Finding
Continued from previous page					
Foot-and-mouth disease	bovine	SA	Aug	3	negative
Foot-and-mouth disease	bovine	WA	Aug	3	negative for FMD/rinderpest
Foot-and-mouth disease	bovine	VIC	Aug	1	calf diphtheria
Foot-and-mouth disease	bovine	NT	Jul	1	tetanus diagnosed.
Foot-and-mouth disease	porcine	QLD	Jul	1	allergic reaction
Foot-and-mouth disease	bovine	VIC	Jul	1	mucosal disease
Hendra virus	equine	QLD	Aug	3	negative
Infectious bursal disease	avian	VIC	Sep	3	negative
Newcastle disease	avian	WA	Aug	3	negative
Newcastle disease	avian	WA	Aug	3	negative
Newcastle disease	avian	NSW	Jul	3	pineal body tumour
Newcastle disease	avian	WA	Jul	3	negative
Porcine circovirus type 2	porcine	NSW	Aug	2	*Streptococcus suis* type 2 septicaemia
Porcine reproductive and respiratory syndrome	porcine	NSW	Jul	3	negative
Porcine reproductive and respiratory syndrome	porcine	NSW	Jul	3	congenital splayleg
Rinderpest	camelid	NSW	Sep	2	*Salmonella* Typhimurium infection
Screw-worm fly	feline	NT	Aug	2	*Lucilia sericata* and other *Lucilia* spp
Screw-worm fly	fauna	NT	Aug	2	negative, some *Calliphora* spp. larvae
Vesicular disease	bovine	QLD	Jul	2	pestivirus and Akabane virus
Vesicular disease	ovine	QLD	Jul	1	cancer related erosions and trauma
Vesicular disease	ovine	QLD	Jul	2	contagious ecthyma
Vesicular disease	porcine	QLD	Jul	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

NAHIS contacts

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

Name	Role	Phone	Fax	e-mail
Chris **Baldock**	National NAHIS Coordinator	07 3255 1712	07 3844 5501	chris@ausvet.com.au
David **Banks**	Northern Australia Quarantine Strategy	02 6272 5444	02 6272 3399	David.Banks@affa.gov.au
Janet **Berry**	Qld State Coordinator	07 4658 4414	07 4658 4433	janet.berry@dpi.qld.gov.au
Chris **Bunn**	Emergency Disease Preparedness, AFFA	02 6272 5540	02 6272 3372	Chris.Bunn@affa.gov.au
John **Elliott**	Tas. State Coordinator	03 6336 5334	03 6336 5374	John.Elliott@dpiwe.tas.gov.au
Graeme **Garner**	Commonwealth NAHIS Coordinator	02 6272 5369	02 6272 4533	Graeme.Garner@affa.gov.au
Tristan **Jubb**	Vic. State Coordinator	03 5430 4545	03 5430 4520	tristan.jubb@nre.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 9426 5999	03 9427 1895	klong@dairysafe.vic.gov.au
Angela **Merianos**	Communicable Diseases Intelligence	02 6289 1555	02 6289 7791	http://www.health.gov.au
Peter **Miller**	National Residue Survey	02 6272 3762	02 6272 4023	peter.miller@affa.gov.au
Barbara **Moloney**	NSW State Coordinator	02 6391 3687	02 6361 9976	barbara.moloney@ agric.nsw.gov.au
Geoff **Neumann**	CEO Animal Health Australia	02 6232 5522	02 6232 5511	aahc@aahc.com.au
Richard **Norris**	WA State Coordinator	08 9368 3637	08 9367 6248	rnorris@agric.wa.gov.au
Diana **Pinch**	NT Coordinator	08 8999 2354	08 8999 2024	diana.pinch@.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

AnimalHealth Surveillance

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