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QUARTERLY REPORT

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Preface

Several articles in this issue deal with Australia's preparation for an outbreak of an emergency animal disease (EAD). The Cost-Sharing Deed of Agreement for funding EAD responses was ratified during the quarter. A simulation exercise in September will test Australia's response to a large-scale disease outbreak.

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. *AHSQ* is available on the Animal Health Australia website (at www.aahc.com.au/nahis).

Gardner Murray
Australian Chief Veterinary Officer

EAD Response Agreement

The Government and Livestock Industries Cost-Sharing Deed in Respect of Emergency Animal Disease (EAD) Responses was ratified in March. The new arrangements will facilitate a rapid and effective response and provide certainty in funding for 63 emergency animal disease threats to Australia.

The Deed, which is referred to as the EAD Response Agreement, now involves industry in the decision-making process and the sharing of eligible costs of an emergency animal disease response. Benefits arising from these new arrangements include:

- certainty and greater transparency of funding for known EAD threats to Australia;
- greater efficiency through increased probability of a rapid response to any occurrence of the 63 diseases; and
- reduction of risk through the development of biosecurity arrangements by each industry as part of a national disease risk mitigation program under the EAD Preparedness Program of Animal Health Australia.

BACKGROUND

Livestock industries contribute more than $16.2 billion annually to the national economy and $14.7 billion to export trade. Australian livestock industries have a comparative advantage over those of many other countries due to their freedom from major epidemic animal diseases that plague other parts of the world.

The new arrangements provide for the sharing of eligible costs of an EAD response by governments and affected livestock industries covering 63 diseases that threaten to Australia. Under the new cost-sharing agreement, diseases have been classified into four categories based on an independent expert scientific assessment of their relative potential

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impact on human health, domestic and international trade, the national economy, animal production, and the environment.

The cost-sharing formula for each category reflects the relative responsibilities of the three parties (industry, Commonwealth Government and State/Territory governments) apportioned by an assessment of the relative public to private benefits of their potential impacts. The categories can be reviewed and new diseases added as circumstances change.

FUNDING THE RESPONSE

Category of Disease	Government Funding	Industry Funding
1: very high public benefits	100%	0%
2: high public benefits	80%	20%
3: moderate public benefits	50%	50%
4: low public benefits	20%	80%

The new arrangements provide for cost-sharing between the parties for the eradication and containment costs of an EAD outbreak, including the salaries and wages, operating costs and capital costs of the combat agencies above the cost of their normal level of animal health services. Costs eligible for cost-sharing also include compensation to the owner of livestock or property that has been destroyed for the purpose of eradication or prevention of the spread of an EAD.

There is an upper limit for cost sharing of 1% of the Gross Value Product (GVP) of the affected livestock industry or industries. The agreement provides that if costs exceed this limit the parties would negotiate on how any further costs may be attributed. The livestock industry contributions are obtained by means appropriate to that industry but generally by an agreed zero-based levy. Industry repayment of any government underwriting will generally be via statutory levy arrangements. Given the likely impact of any EAD outbreak on an industry, repayment options need to retain some flexibility. Repayment will be on the basis of preserving the net present value of the amount paid by the Commonwealth Government.

OTHER PROVISIONS

As well as provisions relating to cost-sharing *per se*, the Agreement has many other important provisions relating to the conduct of a response to an EAD. In particular, it refers to the use of a series of existing standards such as the Australian Veterinary Emergency Plan (AUSVETPLAN) and defines standards for training of response personnel, accounting and auditing. It also refers to National Animal Health Performance Standards or benchmarks that are being developed across all sectors of the national animal health system.

IMPROVING NATIONAL BIOSECURITY

The Agreement has been linked to improving biosecurity within each industry via a National Disease Risk Mitigation Program that involves each industry party preparing and promulgating a plan to improve on-farm biosecurity arrangements. This means encouraging the adoption by all producers of some simple measures that will reduce the likelihood of a serious disease spreading. In addition, government parties will prepare statements outlining their biosecurity policies and programs, including feral animal, public health and environmental policies.

LIVESTOCK INDUSTRY INVOLVEMENT

One of the most significant outcomes is the formal inclusion of the livestock industries in decision-making about the management of an EAD outbreak. A highlevel committee comprising chief executives of government parties and presidents of livestock industry parties has been formed to manage response plans and budgets and to monitor expenditure. This committee, the EAD National Management Group (NMG), will also carry responsibility for decision-making on policy and resource allocation issues. Technical representatives of each relevant industry will also be appointed to the Consultative Committee on Emergency Animal Diseases (CCEAD), which is the key technical coordinating body providing links between the parties and advising NMG on the national response to an EAD outbreak.

Further details about the EAD Response Agreement can be found on the internet (http://www.aahc.com.au).

Contact: Geoff Neumann, Chief Executive Officer, Animal Health Australia

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.

AUSVETPLAN Developments

The Australian Veterinary Emergency Plan (AUSVETPLAN) remains the foundation for national emergency animal disease (EAD) preparedness and response.

There have been a number of recent changes to the management of AUSVETPLAN manuals with Animal Health Australia now assuming responsibility for their maintenance and further development. Revision of the 45 current second-edition manuals will be undertaken according to a three-year timetable developed on a priority risk-based approach.

Senior government officials and industry leaders reaffirmed AUSVETPLAN as the national planning framework at a highlevel policy meeting in November 2001. This was further reinforced with the ratification of the EAD Response Agreement in March. Jurisdictions are obliged to use AUSVETPLAN, develop agency plans based on AUSVETPLAN, and have staff trained to perform roles described in AUSVETPLAN, based on the national EAD competency standards.

Livestock industries are also now formally included in the AUSVETPLAN Technical Review Group. This group comprises technical experts from all governments, Animal Health Australia, and relevant livestock industries to review and develop AUSVETPLAN policy issues.

A number of important AUSVETPLAN Disease Strategy Manuals have undergone recent revision and are in the advanced stages of editing and formal endorsement:

- bovine spongiform encephalopathy (BSE);
- Newcastle disease;
- highly pathogenic avian influenza;
- anthrax;
- foot-and-mouth disease (FMD);
- bovine brucellosis;
- surra; and
- Australian bat lyssavirus.

In addition, expert writing groups are currently revising the following:

- wild animal management manual;
- dairy enterprise manual;
- control centres management manual;
- disposal manual; and
- AUSVETPLAN summary document.

Contact: Peter Thornber, Manager, Animal Health and Emergency Services, Animal Health Australia

Exercise Minotaur, an FMD preparedness simulation

A week-long simulation, called 'Exercise Minotaur', will be held in September to test Australia's preparedness against emergency animal disease (EAD). The exercise will test the response capabilities of all levels of government (Commonwealth, State/ Territory and local) to work in conjunction with industry to manage and contain a major disease outbreak, such as foot-and-mouth disease (FMD)

BACKGROUND

Australia is free of FMD. The economic and social consequences of an outbreak of FMD in Australia would be significant. Recent FMD events in Asia and Europe, particularly in the United Kingdom last year, provided valuable lessons, especially in relation to border activities and how to respond effectively to an outbreak. Australian governments and industry are implementing a series of measures based in large part on the lessons learned from overseas experience. Current preparedness and response plans for FMD are well developed and are often used as a basis for planning by other countries. The plans are available online (at http://www.aahc.com.au/preparedness/index.htm). However, the scale of the United Kingdom's epidemic last year demonstrated that although Australia could cope with a small-scale event, significantly enhanced measures would be needed to manage a large epidemic.

In June 2001, the issue of national preparedness for FMD was put on the agenda of the Council of Australian Governments (COAG). COAG noted that if a significant outbreak of FMD were to occur in Australia, the technical, logistical, social and financial responses needed to manage the situation would require a significant whole-of-government effort. To support a national whole-of-government framework, a Memorandum of Understanding between Heads of Government is being developed to cover issues such as trigger points for activating national plans and the roles and responsibilities of the various parties that would act in an emergency — including animal health services, emergency services, support agencies and industry.

During the past 12 months, a number of activities have been undertaken to support a whole-of-government approach to FMD. These include legislative amendments, a review of all jurisdictional animal disease and emergency plans, training and extension, agreement to a revised government–industry cost-

sharing arrangement, and an examination of relief and recovery options. The Productivity Commission is examining the potential social and economic consequences of an incursion of FMD to help support future decision-making processes (http://www.pc.gov.au/research/commres/footandmouth/index.html). In addition, the Commonwealth Government has provided significant funds to enhance border protection. The whole-of-government approach being taken will significantly improve Australia's ability to prevent, respond to and manage any incursion of FMD. It will also enhance national preparedness for other emergency responses to other animal diseases for which a whole-of-government and industry approach would be required.

Underpinning these activities are a number of technical and scientific issues, including improved epidemiological and economic modelling, zoning arrangements, monitoring and surveillance, vaccination policy and supply, management of feedstuffs, laboratory capacity, potential feral animal risks, carcase destruction and disposal, and animal welfare. A series of simulation exercises is exploring the various components of a response to an incursion of FMD. The simulations range from orientation and desktop activities to field exercises. These simulations will culminate in a national simulation ('Exercise Minotaur') in September, designed especially to test communications and coordination frameworks.

EXERCISE MINOTAUR

'Exercise Minotaur', to be held in the week 8–13 September 2002, will be a 'desk-top' activity and will not involve actual field operations such as movement restrictions or communication with other countries. For the exercise, up to three States or Territories will be hypothetically 'infected' and need to respond at a decision-making level, including the activation of Local Disease Control Centres and State Disease Control Headquarters. The 'disease-free' States and Territories will also be involved in response activities: managing requests for resources for operational activities, animal surveillance, responding to the economic and social consequences of closed international markets for Australian produce, and cross-border transport and trade issues.

Aspects of an outbreak to be examined include:

- the integration of national arrangements between levels of government and with industry;
- administrative arrangements supporting the operations;
- the capacity of resources to manage an FMD outbreak and its consequences;
- logistical arrangements;
- the effectiveness of disease control policies and strategies as described in AUSVETPLAN
- trade management arrangements;
- socioeconomic and recovery strategies and processes;
- effects on the dairy, beef, pork and sheep industries; feedlots; live animal; exports; and feral animals;
- effects on other rural industries such as those concerned with wool and grain;
- effects on rural communities; and
- effects on the Australian economy and non-rural communities and industries.

Australian government and industry organisations will provide staff to act as impartial facilitators and umpires for the simulation, and a number of international observers will also ensure that 'Exercise Minotaur' is subject to independent and objective review.

Further information can be found on the internet (at www.affa.gov.au/exerciseminotaur) or by e-mail (to exercise.minotaur@affa.gov.au).

Aquatic animal health

CONTROL CENTRES MANUAL

In February, the AQUAVETPLAN Control Centres Manual was published as the third in a series of operational manuals and instruments. AQUAVETPLAN manuals outline the methods and protocols that will help ensure Australia is prepared for outbreaks of aquatic animal emergency diseases. The AQUAVETPLAN manuals are being produced as part of AQUAPLAN, Australia's National Strategic Plan for Aquatic Animal Health (1998–2003).

The Control Centres Manual describes the procedures, management structures and roles of personnel in the event of a suspected or actual aquatic animal disease emergency. It is a general manual intended for use by all jurisdictions for all emergency diseases or conditions in:

- operations, either as the primary manual or as a detailed reference to back-up action plans;
- planning, as the basis for the development of more specialised procedures; and
- training, as a key reference.

The manual has been endorsed by industry, the Commonwealth Government, and State/Territory governments. A copy can be obtained by e-mailing aah@affa.gov.au.

NATIONAL SURVEY FOR WHITE SPOT VIRUS

The detection of polymerase chain reaction (PCR) signals indicative of possible infection with white spot virus (WSV) in crabs within the Darwin Aquaculture Centre and prawns within the Aquaculture School of the Northern Territory University was reported in *AHSQ* Vol. 5, No. 4. The subsequent Australia-wide survey of crustaceans (*AHSQ* Vol. 6, No. 1) to determine whether WSV was present has now been completed and a summary report released..

A preliminary positive result was observed at one of the 17 sample sites for farmed crustaceans tested in the survey. Two pools of sand crabs from Bribie Island Aquaculture Research Centre gave preliminary positive results. Of the 47 wild population sites sampled, 45 sites were negative for WSV, and preliminary positive results were obtained from two sites — banana prawns (*P. merguiensis*) from Weipa and eastern king prawns (*P. plebejus*) from Port Jackson.

Duplicate tissues from all samples returning preliminary positive results were retested at a second laboratory, and all retested negative. Samples of gill tissue from the WSV PCR-positive crabs were assessed by bioassay and no viable WSV was found.

WSV was not confirmed in any of the 3051 crustaceans sampled from 64 locations around Australia, and no mortalities or clinical signs of WSV were observed in any crustacean population during the survey. The survey design was sufficient to detect a prevalence of 0.5% (as 10% of individuals at 5% of sites) with a high degree of confidence.

This finding, combined with:

- the absence of WSV in the survey of farmed crustaceans conducted in 2000;
- the absence of clinical white spot disease in Australia; and
- the historical absence of WSV from Australia

allow the conclusion to be drawn that WSV is not present in Australian waters.

WHITE SPOT VIRUS REVIEW

Following from three initial reviews (industry, Commonwealth, and State/Territories: *AHSQ* Vol. 6, No. 4) into the national response to the WSV incident in Darwin, a final joint review was conducted in Sydney in late February. Representatives from each of the initial reviews met in Sydney to finalise a set of recommendations to improve the national management of emergency disease incidents. The final recommendations included:

- Development and implementation of a communication strategy.
- Identification of the aquatic CCEAD Secretariat within the Office of the Chief Veterinary Officer (OCVO) in Agriculture, Fisheries and Forestry — Australia (AFFA) as the central point of contact for the response to national aquatic animal disease emergencies.
- Development and conduct of an education and training program on the CCEAD process that will be undertaken by all participants in CCEAD, including industry representatives.
- Revision of the CCEAD Terms of Reference and Operating Guidelines to improve its arrangements for aquatic animal disease emergencies. The revision needs to coincide with the revision underway for the terrestrial animal CCEAD and needs to include explicit statements that identify CCEAD as the appropriate body to:
  - determine whether an aquatic animal disease emergency exists that requires involvement of CCEAD;
  - determine the nature of the aquatic animal disease emergency;
  - declare an emergency situation over; and
  - permit CCEAD to establish a national multidisciplinary, scientific working group to assist with scientific and technical issues, specifically for each emergency situation.
- Referral of aquatic animal health issues related to disease emergencies outside the scope of CCEAD to the future Aquatic Animal Health Consultative Committee (AAHCC).
- Development of a case definition and a set of diagnostic criteria for each important disease to be developed out-of-session under the overview of CCEAD.
- Inclusion of non-government organisations in CCEAD discussions.

Pending endorsement by CCEAD, these recommendations will be submitted to the Primary Industries Standing Committee for consideration and endorsement in September 2002.

COMMONWEALTH FUNDING FOR AQUATIC ANIMAL HEALTH

In the May 2000 Budget, the Commonwealth Government announced its Building a National Approach to Animal and Plant Health program. Within this initiative, funding was made available over four years to AFFA, as administered funds, for aquatic animal health research into four specific program areas:

1. diagnostics;
2. emergency management planning ('manuals');
3. emergency management training and incident simulation ('training'); and
4. establishment of a joint industry–government body for aquatic animal health management.

Under an agreement between the Fisheries Research and Development Corporation (FRDC) and AFFA, these funds are administered by the FRDC on AFFA's behalf, through the FRDC Aquatic Animal Health Subprogram. Projects under this subprogram have already commenced for Program 1 (diagnostics), and are almost completed for Program 4 (joint industry–government body). Seven projects focusing on the development of improved diagnostic methods for diseases of fish, crustaceans and molluscs are currently being conducted.

Projects under Programs 2 (manuals) and 3 (training) are being developed in parallel. To date, few major disease incidents have occurred in Australian aquaculture and fisheries. As a result, government departments and industries have relatively little experience in incident management for emergency diseases. These two programs aim to provide the necessary resources and training to enhance the capability of industry and government to respond quickly and effectively to emergency aquatic animal disease incidents.

During December 2001 and January 2002, industry and government stakeholders were asked to suggest priority projects under the 'manuals' and 'training' programs. The Aquatic Animal Health Subprogram's Steering Committee and Scientific Advisory Committee evaluated the suggestions in February. Subsequently, full project applications to the FRDC were invited, and these will be assessed by the FRDC subprogram in April. FRDC will make a final decision in May.

Updates on all of the budget initiative projects and other aquatic animal health research projects can be found in the FRDC Aquatic Animal Health Subprogram's newsletter *Health Highlights*. Free subscriptions to the newsletter can be arranged by sending an e-mail (to iska.sampson@affa.gov.au).

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

Rural animal health services

The provision of animal health services in rural areas is an important issue facing many countries, including Australia. As a component of its Animal Health Services Program, Animal Health Australia last year established a Required Skills Steering Committee, with membership from Veterinary Committee, the Australian Veterinary Association (AVA), university deans, livestock industries (including the Cattle Council of Australia, CCA), CSIRO, Meat and Livestock Australia, and the Rural Training Council.

Late last year, CCA and AVA met with the both the Commonwealth Government and the Opposition on the issue. The Commonwealth Government subsequently announced a $2 million program to improve animal health services in rural areas, commencing with a $200 000 review, jointly funded by industry and the Commonwealth Government Departments of Agriculture, Fisheries and Forestry, and of Education, Science and Training.

In February, CCA hosted a workshop to develop terms of reference for the review. The workshop acknowledged that the 'rural veterinary crisis' is considerably broader than the catch-phrase suggests. The provision of animal health services, including government veterinary services, in the livestock industries is the central issue of concern. In particular, the focus should be on trade access and market protection, particularly disease surveillance and response capability, and include public health, animal welfare and environmental considerations.

The workshop agreed that the review should examine future demands and the current supply situation, identify gaps, and explore a wide range of options for addressing these gaps before making recommendations on strategy, delivery, management, funding and timing. The value of the workshop was in having participants explore the issue and obtain broad agreement on the purpose of the review, which should be completed by September.

For further information: Peter Thornber, Animal Health Australia

Australian bat lyssavirus

Updated information about health policy for Australian bat lyssavirus is available on the internet (at http://www.health.gov.au/pubhlth/cdi/pubs/bat_lyssa.htm). Three documents — relevant to the needs of medical practitioners, veterinarians, and the general public — were developed by the Communicable Diseases Network Australia, in consultation with the Department of Agriculture, Fisheries and Forestry — Australia, and a number of experts on the disease.

Johne's disease update

Although most of the focus on Johne's disease (JD) in Australia has been on cattle and sheep, JD has been reported in goats for many years and, in the past decade, in red deer and South American camelids. This report provides an update on JD in these species.

CAMELIDS

As well as one case in a llama, about 30 cases of JD have been diagnosed in alpaca in Australia. However only four Victorian herds and one NSW herd are now classified as infected. About 180 herds are enrolled in the market assurance program. During 2000 and 2001, 5400 faecal cultures were done (mainly in southern Australia) with no evidence of infection by *M. paratuberculosis* detected.

GOATS

The cattle strain of *M. paratuberculosis* infects 21 of the 24 known infected goat herds, which, except for two Angora and one Boer goat herds, are dairy goat herds. The three herds infected with sheep strains of *M. paratuberculosis* are NSW Cashmere herds

DEER

During the past few years, infection with *M. paratuberculosis* has been confirmed in eight red deer herds — one in Queensland, six in Victoria and one in South Australia. Only the cattle strain of *M. paratuberculosis* has been identified. Although the origin of these infections is uncertain, deer herds have been established on former cattle farms and large numbers of red deer have been imported to Australia from New Zealand where JD in deer has developed into a significant health problem.

The initial detection of JD in deer in Australia was in a mesenteric lymph node following routine post mortem examination of a 10-year-old red deer hind in Queensland in 1999. Subsequent culture of 70 animals, either by faeces or after slaughter, was negative. However, two animals were positive on lymph node culture in early 2001. There has been no clinical disease suggestive of JD and no lesions were detected in the intestines of these animals. The herd remains under quarantine. Traces forward from Victoria to three other herds have been faecal culture negative on two occasions.

JD has caused significant mortalities in young deer in one of the Victorian herds. Two of the Victorian herds are studs with significant contacts to other red deer herds. Following the diagnosis in the first stud, a large amount of testing of trace-forward animals was undertaken by faecal culture. This detected infection in one further commercial herd. Movements from the second infected stud have been traced to more than 20 Victorian red deer herds.

South Australia recently confirmed JD in a herd in which two clinical cases were investigated. These cases were considered typical of a wasting condition that is alleged to have become more common in recent years. Seven SA herds are suspect as a result of tracing and a further herd is under suspicion as deer have been moved onto an infected dairy farm.

JD has not been diagnosed in deer in the other States or Territories.

The Western Australian deer industry, which has about 50 herds with more than 100 head is based on about 3000 animals that were imported from New Zealand and Victoria from the mid-1980s to early 1990s. It aims to be declared JD-free and WA is undertaking surveillance by culturing pools of faecal samples (of 10 animals per pool) to support a case for freedom. However, WA currently has three herds comprising 1900 animals under suspicion as a result of traces. No clinical evidence of JD has been seen.

The Northern Territory would like to expand its protected status to include deer as well as goats, buffalo and camels, but the costs are considered to outweigh the benefits of a survey at this time. There are feral sambar deer on the Cobourg Peninsula. The Territory has only three or four small deer herds and these are regulated by the Parks and Wildlife Commission NT, which requires high fencing around herds, and controls on entry and exit.

Mainland Tasmania has only fallow deer and there are no deer herds suspected of being infected. Most of the larger deer farms are in the beef and sheep grazing areas that to date do not appear to have a high prevalence of JD. There is also very little co-grazing of deer and cattle, sheep or goats.

Contributed by: David Kennedy, National JD Coordinator

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).

BSE submission to the European Union

Australia has lodged a second detailed submission with the European Commission regarding bovine spongiform encephalopathy (BSE). The first submission (in March 1999) led to Australia being assigned the lowest geographical BSE risk (GBR) rating ('level 1'), meaning 'it is highly unlikely that domestic cattle are (clinically or preclinically) infected with the BSE-agent'. The second submission was provided in response to a new regulation of the European Parliament that specifies rules for the prevention, control and eradication of certain transmissible spongiform encephalopathies (TSEs). This submission has also been provided to the New Zealand Ministry of Health for its assessment of importing countries' status in regards to BSE.

Australia has in place a range of strict quarantine and other preventive animal health measures to guard against the introduction and establishment of BSE. These measures conform with, or are stricter than, the relevant recommendations of international organisations such as the Office International des Epizooties (OIE) and the World Health Organization (WHO). Australia continues to monitor international developments to ensure that preventive strategies against BSE and related diseases reflect current scientific information and are appropriate to Australian circumstances. All available evidence shows Australia continues to be free of all TSEs affecting animals, including BSE and scrapie.

Contact: Andrew Cupit, Office of the Chief Veterinary Officer

PIMC, PISC, and PIHC

The Primary Industries Ministerial Council (PIMC) is the peak government forum for consultation, coordination and, where appropriate, integration of action by governments on primary industries issues. PIMC was formed from the amalgamation of two previous ministerial councils (ARMCANZ and MCFFA) (see *AHSQ* Vol. 6, No. 3) with its first meeting in May 2002.

PIMC membership is open to the Ministers who are responsible for primary industries matters. All Commonwealth, State/Territory and New Zealand government ministers responsible for agriculture, food, fibre, forestry, fisheries and aquacultural industries and production, and rural adjustment policy are members of the Council. Papua New Guinea is invited to participate in meetings as an observer. PIMC is chaired by the Commonwealth Minister responsible for Agriculture, Fisheries and Forestry with a Secretariat provided by the Department of Agriculture, Fisheries and Forestry — Australia.

Decisions of the Council are arrived at by consensus. For consideration of issues out-of-session, agenda papers are directed to all Council Ministers with the most appropriate Minister asked to provide a single coordinated State/Territory response. The Council meets twice a year with meetings hosted by members in an agreed rotation. The proceedings are held *in camera* and all members clear the resolutions of Council before they are published.

PIMC is supported by a permanent Standing Committee, the Primary Industries Standing Committee (PISC), membership of which comprises Departmental Heads/CEOs of relevant Commonwealth, State, Territory, and New Zealand agencies. A number of newly established sub-committees support PISC:

- Industries Competitiveness Committee (ICC);
- Rural Affairs Committee (RAC);
- Primary Industries Health Committee (PIHC); and
- Forestry and Forest Products Committee (FFPC).

There are other sub-committees that interact with PISC, but which are primarily responsible to other Ministerial Councils. In addition task forces (such as the FMD–BSE task force) are set up as necessary.

Although the precise way PIHC will operate has not yet been established, its role will be to provide strategic direction and to act as a filter and decision-maker on material on the PISC agenda. Its brief covers topics such as:

- plant and forest health;
- animal and fish health;
- agricultural and veterinary chemicals;
- animal industries public health;
- emergency animal diseases;
- exotic plant pests and diseases;
- FMD and BSE;
- veterinary issues;
- dioxins;
- natural toxins;
- uniform animal and plant health legislation;
- quarantine;
- appropriate level of protection (ALOP); and
- import risk analyses (IRAs).

Contact: Jill Mortier, Office of the Chief Veterinary Officer

JETACAR and antimicrobial resistance

In November 2000, after the release of the report of the Joint Expert Technical Advisory Committee on Antibiotic Resistance (JETACAR: *AHSQ* Vol. 5 No. 4), the Commonwealth Interdepartmental JETACAR Implementation Group (CIJIG) was established to facilitate and coordinate the progressive implementation of the Government's response to the report. The Primary Industries Standing Committee JETACAR Taskforce, with representatives of the major animal industries and State/Territory governments, provides advice to CIJIG on issues affecting the animal industry. During 2002, a number of the recommendations that affect the veterinary profession and animal industries will be considered..

ANTIBIOTIC GROWTH PROMOTERS

The National Registration Authority for Veterinary and Agricultural Chemicals (NRA) has received comments from the Expert Advisory Group on Antimicrobial Resistance (EAGAR) in its review of virginiamycin. It is anticipated that a draft report will be available for public comment in August 2002.

An NRA review of the macrolide antibiotic growth promoters commenced early in 2002 and is likely to be available for public consultation early in 2003.

S4 SCHEDULING FOR ANTIBIOTICS

The National Drugs and Poisons Schedule Committee (NDPSC) is considering the recommendation that all antibiotics be scheduled as 'prescription only' (S4). The scheduling of ionophores will be considered in June 2002, intramammary antibiotics in October 2002, and virginiamycin and the macrolides at the same time as they are assessed by NRA.

MONITORING ANTIBIOTIC USE

The Therapeutic Goods Administration (TGA) and NRA are investigating cost-effective options for monitoring and auditing of antibiotic use. Their 'Proposal for improvement of the collection of antibiotic use data in Australia' is available for public comment on the JETACAR website (see below).

MONITORING AND SURVEILLANCE FOR ANTIMICROBIAL RESISTANCE

Contractors have completed nation-wide consultations to review existing systems of surveillance and monitoring and are preparing a draft report on the most appropriate national surveillance and monitoring system for Australia. Part of the report will deal specifically with monitoring and surveillance for resistance originating from food animals. It is proposed to hold a meeting of stakeholders in August 2002 to discuss this aspect of the report.

VETERINARY PRESCRIBING

States and Territories have agreed to harmonise legislation on the control and use of agricultural and veterinary chemicals using a set of principles that were adopted by the then Standing Committee on Agricultural Resource Management in 1999. It is anticipated that all jurisdictions will pass the necessary legislation in place by mid-2003.

FURTHER INFORMATION

JETACAR: www.health.gov.au/pubhlth/strateg/jetacar

EAGAR: www.nhmrc.gov.au/eagar/contents.htm

OIE www.anmv.afssa.fr/oiecc/conference/guidelines.htm

Contributed by: Jonathan Webber, Office of the Chief Veterinary Officer

Endosulphan survey

The sixth annual endosulphan survey in Queensland and New South Wales (NSW) from November 2001 to February 2002 was built on the experience gained from previous years. Emphasis was again placed on developing a targeted program using risk management principles that reflected risk and responsibility. The two levels of testing incorporated endosulfan users and/or cattle producers within a notification zone (ascertained from the response to one of the questions on the vendor declaration) and background surveillance testing based on 'risk' shires (those with a high ratio of cotton to cattle properties or horticultural shires with a known endosulfan exposure risk) in Queensland and NSW.

Overall, 767 samples were tested from 460 properties. Reportable levels of endosulphan (at or above 0.02 mg/kg) were detected in cattle from six properties. Residue levels were lower than last year, with all residue detections less than half of the maximum residue limit (MRL). Most of the residues were associated with spray drift from cotton crops. The program's successful outcome was facilitated by several factors including the cancellation of ultra low volume (ULV) endosulphan and seasonal conditions in the field (resulting in low pest pressure), with subsequent limited use of endosulphan and a shift towards alternative chemicals.

Contributed by: Peter Miller, National Residue Survey, AFFA

State and Territory reports

New South Wales

Contributed by:
Barbara Moloney
NSW Agriculture

ANTHRAX

There were no positive cases of anthrax during the quarter. Investigations of mortalities on nine properties (two ovine and seven bovine) were negative on stained smears from peripheral blood and/or internal organs. All properties were within the known 'anthrax belt' in NSW.

CATTLE TICK

In early January, tick fever due to *Babesia bovis* was diagnosed in a four-year-old cow, which subsequently died. No cattle tick were detected when all of the 63 head on the property were examined.

The last diagnosis of tick fever in NSW was in 1998 when a single animal died. No cattle tick were detected on that occasion either. However, in 1997 a significant outbreak of tick fever, which occurred on two adjoining properties (with mortalities of 8 out of 65 and 31 out of 120), was an unusual case in that there was a heavy infestation of cattle tick on both properties.

ACUTE LIVER DISEASE IN CATTLE

Significant morbidity and some mortalities occurred in 7-to-10-month-old calves recently moved to an agistment property in the south-east of the State. Affected animals showed varying signs, including swelling of the head and/or abdomen, restlessness with kicking at abdomen, elevated temperature, mucoid nasal and oral discharge, and photosensitisation. Post mortem examination showed numerous petechial and ecchymotic haemorrhages throughout the body, swelling of liver and kidneys, and subcutaneous oedema. Microscopic changes included severe acute liver necrosis suggestive of plant, algal or fungal hepatotoxin. Further investigation of plant materials is being undertaken. This case appears to have similarities with acute bovine liver disease recently reported in South Australia, Victoria and Tasmania.

WORM CONTROL

Worm control in sheep across NSW has fluctuated with the weather, as one would expect. Many areas of the State have experienced periods of good rainfall with intervening dry periods. Consequently, in many localities there have been waves of clinical helminthosis, including haemonchosis, followed by periods of decreased availability of larvae on pasture as drier conditions set in.

Anthelmintic resistance in sheep and goat worms continues to worsen. NSW Agriculture and other advisers still vigorously promote integrated parasite management, a decreased dependence on drenching, and avoiding overuse of the macrocyclic lactones (MLs), the last group of highly efficacious broad-spectrum anthelmintics.

District veterinarians in cooperation with NSW Agriculture (ML Resistance Targeted Surveillance Project) have uncovered moxidectin-resistant *Haemonchus contortus* on three farms in northern NSW. Sustainable worm management is still possible on these farms, but only with increased emphasis on non-drench strategies to control internal parasites.

Northern Territory

Contributed by:
Diana Pinch
DBIRD

BOVINE TUBERCULOSIS

After two years during which no bovine tuberculosis (TB) cases were recorded in the Northern Territory, a breakdown occurred on a property in the Darwin district in January this year. The lesion from the index case was submitted as part of the National Granuloma Submission Program. It was found in an aged buffalo cow slaughtered at one of the smallest abattoirs in the country. A positive diagnosis of TB was initially made by histological examination at Berrimah Veterinary Laboratories. TB testing of animals on one of the two traceforward properties detected three further buffalo with TB. All primary contacts on the property of origin of the index case and the two traceforward properties have now been removed. Secondary contacts continue to undergo TB testing.

DIARRHOEA IN YEARLINGS

Approximately 10% of a mob of 800 yearlings in the Douglas–Daly region showed diarrhoea. Some stock looked rough-coated when they were affected, but overall were in good body condition and on excellent pasture. The problem lasted through December and January, with only a few cases remaining in February. Examination of faecal samples in February showed that treatment of the two groups with macrocyclic lactones, carried out either in September or in December, had been effective in reducing the burden of gastrointestinal worms to a low level. Only one animal from 14 sampled showed a high faecal oocyst count, with *Eimeria bovis* being present. The stock had been receiving a prophylactic dose of monensin

contained in a dry season supplement up until late November, when it was discontinued. It is thought that due to infection with *E. bovis*, the stock developed diarrhoea following the withdrawal of monensin from the diet in late November. The clinical signs were mild compared with the severity of those of coccidiosis seen in stock soon after weaning. In a trial conducted at Berrimah Farm, a similar resurgence in coccidial oocysts counts was recorded following the withdrawal of long-term prophylactic treatment.

POULTRY

Seroconversions to flaviviruses in sentinel chicken flocks were widespread during the quarter. The seroconversions to Murray Valley encephalitis virus and/or Kunjin virus occurred in flocks near Darwin, in Katherine, Tennant Creek and Alice Springs. A second chicken flock has recently been established in Alice Springs to monitor arboviral activity at the Ilparpa Swamp.

Over a four-week period, 45 out of 100 chicken poults died on a farmlet in Alice Springs. Histological examination confirmed lesions consistent with infectious laryngotracheitis (ILT). This is believed to be the first reported outbreak in the Northern Territory. Chickens are normally vaccinated against ILT at the hatchery, but these may not have been vaccinated adequately. Treatment with oxytetracycline was effective in affected birds, and it is likely bacteria were causing secondary infections, resulting in death.

In the Katherine area, botulism caused 25% mortality in 80 turkeys, over a five-day period. Birds were ambulatory with uncontrollable head movements, before becoming recumbent with necks outstretched. There were no remarkable findings from four post mortem examinations, although the proventriculi were empty or impacted. No maggots or foreign material could be identified. The birds are fed once per day, indicating rapid onset. Laboratory testing with the mouse protection test confirmed botulism, caused by the type C toxin.

HORSES

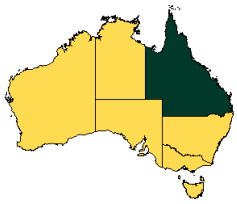
A property in the Darwin rural area reported horses developing signs of lameness and stiffness, progressing over days to paresis/paralysis and, eventually, requiring the euthanasia of affected horses. After a third animal (a three-month-old foal) became affected, departmental veterinary officers were contacted. The foal had previously been in a paddock that the other two horses shared, but was removed after its mother died. The foal had improved since being removed from the paddock. Blood was collected for viral isolation, and haematological and biochemical values were normal. Plant poisoning was suspected and a botanist was consulted. A diagnosis of Java bean (*Senna obtusifolia*) poisoning was made and, according to the literature, the horses exhibited classic signs. The paddock where the horses were kept had a dense growth of this plant. Previously, another horse affected in the same paddock had made a full recovery when removed.

CAMELS

Deaths occurred in camels from Alice Springs that were being spelled in Darwin. The cause was infection with *Burkholderia pseudomallei*, which led to an acute disease characterised by the formation of small abscesses throughout the lungs. Eleven of one group of 18 camels, and 18 of another group of 21 camels died after spelling for four days or more in the midst of the 'Top End' wet season. Camels appear to be highly susceptible to melioidosis. The causative bacteria are environmental organisms found in soil and water throughout the 'Top End'.

Queensland

Contributed by:
Janet Berry
QDPI



SURVEILLANCE WORKSHOP

A State surveillance workshop was held in Brisbane during March to foster greater integration and cooperation between animal, plant, aquatic and apiary surveillance in Queensland. Many staff are involved in monitoring for pests and diseases around the State and this was the first time they had gathered together as a group to share ideas, methods of conducting surveillance, and the problems encountered.

State surveillance is required to align with National surveillance programs. Roly Neiper and Simon Winter from Animal Health Australia and Rod Turner from Plant Health Australia addressed the workshop to encourage close relations between Queensland programs and national animal health priorities, and to develop interstate cooperation in developing solutions.

The workshop began by considering the emerging issues that impinge on the business of establishing presence or absence of pests and disease in the State. Issues identified included new technologies available, limited resources, the global picture with regard to pest and disease risks, and the potential of wider community involvement in surveillance programs. These will be incorporated into future plans.

A key speaker was Joe Baker, the Queensland Chief Scientist, who encouraged all attending the workshop to appreciate that new ideas, however small, can have far-reaching benefits. This means having confidence in oneself and one's own ideas as well as listening to and supporting the ideas of others. Future meetings are to

be held between senior APHS management and Joe Baker to develop ways to encourage and support innovation.

The workshop split into terrestrial animal, aquatic animal, and plant groups to discuss operational issues, the targets to be achieved, and skills and resources required. A State policy for surveillance has been completed as a result of the workshop and a State operational plan is being developed.

BOVINE TUBERCULOSIS

Mycobacterium bovis was confirmed by culture from lesions in a four-year-old steer fattened on a Taroom Shire property. Traceback investigations are underway to determine the property of origin of the animal. Traceforward investigations were not required since the property concerned fattens cattle for slaughter.

BOVINE EPHEMERAL FEVER

Reports of cases of bovine ephemeral fever (BEF) were received from all areas of the State during the quarter. Cases were confirmed on the Darling Downs and Toowoomba Range with detection of virus in blood samples by PCR from typical clinical cases. The deaths of 10 dairy cattle at Coomera during early March were presumed to be due to BEF based on serological evidence and elimination of other possibilities. In January, significant numbers of cases of BEF were reported in the Springsure/Rolleston area. One producer reported losing 30 calving heifers and young cows, with calving complications exacerbating the losses. In Hinchinbrook Shire in north Queensland, a 2-year-old Brahman bull running with 80 heifers was lame, and reluctant to stand or move. The bull and one heifer died.

LANTANA CAMARA POISONING

On an Atherton property, 2-year-old Brahman-cross steers were affected with jaundice and peeling of the skin. One had died and five more were affected and seeking shade. Post mortem examination revealed severe jaundice and an ochre liver. On histology, the liver showed diffuse swelling of hepatocytes and loss of centrilobular architecture, with vacuolation of nuclei and margination of chromatin. Scattered single cell necrosis and moderate amounts of bile pigment were seen. The kidney was also affected, with vacuolation of glomerular tufts, acute necrosis of proximal tubular epithelium, and protein casts in collecting ducts and distal tubules. These changes were consistent with those seen in lantana poisoning. Poisoning due to ingestion of *Lantana camara* was also found to be the cause of death in eight of 250 six-month-old heifers on a property in Broadsound Shire.

XANTHORRHOEA JOHNSONII POISONING

Xanthorrhoea johnsonii poisoning was diagnosed in 3-year-old Brahman cows from a herd of 150 cows with calves at Gin Gin in early January. Three cows had died and six others were affected, being ataxic with a staggering gait and a consistent tendency to lurch to one particular side, resulting in circling. Their urinary bladders had lost tone and they were incontinent. Mild degenerative changes were seen in the white matter of the cerebellum and medulla oblongata, but not in the lumbar spinal cord. Access to 'grass trees' with flower spikes was confirmed and a specimen was identified by Queensland Herbarium as *X. johnsonii* (northern forest grasstree), a species that has been noted as toxic since the 1950s when the syndrome was reproduced by feeding flower spikes.

ARSENIC POISONING

Fourteen six-year-old cows died from arsenic poisoning on a property near Charleville. The deaths of four cows in the paddock a few weeks previously were attributed to a plant poisoning. However, when further cattle were put into the paddock and ten were found dead 24 hours later, the deaths were investigated. Some carcases were found in an old rubbish dump containing old drums of chemicals. There was water lying in the bottom of the dump and cattle had been drinking the water. Two autopsied cows had a mild hepatitis and an arsenic level in the kidney and liver ranging from 10 to 20 mg/kg fresh weight, diagnostic for arsenic poisoning. The liquid that leaked from a discarded drum of chemical mix was analysed and was a red phenol containing 60% arsenic trioxide. Advice was given to contain the damaged drums inside larger drums that were coated with cement and buried deep, away from the water table.

ENTEROTOXAEMIA IN LAMBS

Enterotoxaemia was diagnosed as the cause of sudden death of 20 lambs ranging from two to five months of age from a flock of 300 near Warwick. Losses had occurred within three days of the introduction of the lambs to a lucerne paddock. The lambs were in good body condition. At post mortem examination they showed pulmonary oedema, a marked excess of pericardial fluid that clotted on exposure to air, swelling of the brain as indicated by flattening of the gyri, and accelerated autolysis of the kidneys (pulpy kidney). Histology of brain sections showed scattered perivascular oedema. Epsilon toxin was detected by the ELISA method in small intestinal contents.

POST-DRENCHING CELLULITIS IN LAMBS

On a property near Roma, a mob of 1500 lambs was mustered, yarded and drenched. Later in the evening after being released, a few were noted with swollen

heads. The next morning, 20 were dead and a further 100 had either head or retropharangeal swelling. Although no new cases developed, affected animals slowly died with abscessation and sloughing of the affected skin despite antibiotic treatment. Tissue sections showed a severe necrotising cellulitis with a mixture of Gram-positive and negative coccobacilli. Bacterial culture proved difficult although *Actinomyces pyogenes* was isolated from some cases. The cellulitis was presumed to be secondary to injury suffered either during mustering, handling or drenching.

MELIOIDOSIS IN GOATS

Melioidosis has been diagnosed in goat herds in north Queensland. On a goat property near Mt Surprise in the Etheridge Shire, 30 of 180 animals died and a further eight were affected. The animals had a history of coughing, weight loss, becoming recumbent and dying within three or four days. A three-year-old goat was autopsied. Microabscesses were present in the kidneys, liver and lungs, indicating a bacterial septicaemia. The complement fixation test (CFT) was positive (1/32 titre) for melioidosis. The faecal egg count was 22 400 eggs per gram, of which 99% were *Haemonchus contortus*. *Burkholderia pseudomallei* was cultured from the lung lesions. The owners have decided to destock the herd because of the zoonotic health risk. *Burkholderia pseudomallei* has also been isolated from goats that have died on two other properties in north Queensland.

BOVINE PESTIVIRUS

Bovine pestivirus was diagnosed as the cause of retinal dysplasia and cataracts, causing clinical blindness in a three-week-old calf near Toowoomba. Histology of the eye showed disorganisation of the retinal layers and retinal detachment, and PCR testing revealed persistent infection with pestivirus. Retinal dysplasia is a teratogenic effect attributed to bovine pestivirus.

LEPTOSPIROSIS TARROSOVI INFECTION

A property near Blackall had a history of extended calving periods and weak 'miserable' calves that died shortly after birth. Poor conception rates were also recorded, particularly in the heifers. Vaccination against leptospirosis had been conducted for some years. The cattle were sampled and the most significant result was that 17 of 29 animals were positive for *Leptospirosis tarassovi,* with the titres recorded indicating recent infection in the herd. Further investigations and sampling of cattle and feral pigs are planned.

South Australia

Contributed by:
John Weaver
PISA

PLANT AND FUNGAL POISONINGS

Cases of phalaris toxicity, ergot and ryegrass staggers continued to be reported. On one farm, pasture sampling and pathology confirmed both ergot poisoning and ryegrass staggers in beef cattle on a predominantly ryegrass pasture.

Lesser loosestrife (*Lythrum hyssopifolia*) toxicity was reported in sheep in the south-east of the State. The disease was characterised by depression, facial swelling, paresis and death.

Beef cattle presenting with swelling of the lower limbs, weakness and leucopaenia were diagnosed as suffering from bracken fern poisoning. At autopsy, lesions typical of a clotting defect were considered supportive of the diagnosis.

In another case of suspected poisoning, 40 out of 200 sheep were found down and in respiratory distress. The animals had been grazing hawthorn, and cyanide toxicity was suspected but foliage analysis failed to detect cyanide.

A station in the north of South Australia reported sick horses, one of which died. Lesions typical of *Pimelea* spp. poisoning were reported from examination of specimens submitted and it was confirmed the plant was present in the area being grazed.

INFECTIOUS LARYNGOTRACHEITIS

Intermittent outbreaks of infectious laryngotracheitis (ILT) in the meat chicken industry began in late December with two or three flocks involved, followed by a couple of weeks of no reports, and then a few more flocks involved. The source of the first case in an outbreak is invariably undetermined but subsequent cases coincide with catching before processing. Vaccination has been undertaken in neighbouring high risk flocks and so far such flocks have not shown evidence of disease.

PARVOVIRUS IN PIGS

Two piggeries reported infertility rates approaching 50%. Rising titres for parvovirus were detected using haemagglutination inhibition testing.

STAPHYLOCOCCAL MASTITIS IN A DAIRY

Many cows on a dairy had varying degrees of mastitis before a number died with severe mastitis. *Staphylococcus aureus* was isolated from the udders of all animals tested.

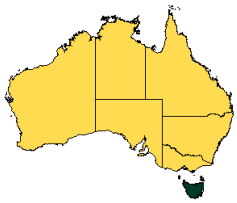
'SHIPPING FEVER' IN A FEEDLOT

Cattle in a beef feedlot were investigated because of a severe dyspnoea and some deaths. At autopsy, a severe haemorrhagic tracheitis was found, from which *Pasteurella haemolytica* was isolated.

NEW STAFF AND SWILL-FEEDING AUDITS

Funds were allocated for swill-feeding audits and other surveillance. Four staff, including three new inspectors, have been employed on these duties and have already undertaken a number of audits.

Tasmania



Contributed by:
John Elliott
DPIWE, Tasmania

BLUETONGUE REACTOR

A bull tested for export certification in January gave a positive agar gel diffusion test for bluetongue. This was investigated further because Tasmania is well outside the regions where bluetongue virus is in circulation. Investigation confirmed that this bull had been imported into Tasmania from northern New South Wales, where bluetongue infection can occur.

The National Arbovirus Monitoring Program has not detected any potential bluetongue vectors in Tasmania nor any seroconversions in sentinel cattle. Co-incidentally, the reactor bull was from one of the Tasmanian NAMP sentinel properties.

POISONING IN CALVES

Over four days in a group of 36 newly-weaned calves, six died and another six became ill. Blood levels of urea and creatinine were high. Interstitial nephritis and tubular degeneration were found at autopsy, which was consistent with the clinical pathology. The calves had recently been put into a paddock where they had access to drums in a burnt logging dump. Green crystalline material found in and near the drums contained high levels of arsenic, chromium and copper. This was consistent with the clinical signs and lesions of arsenic poisoning.

The owner was ordered to withhold the surviving calves from slaughter for six months to ensure that any meat residues of heavy metal had been eliminated. Clean-up of the site, supervised by the Environmental Operations Branch, included removal of all contaminated soil and mixing this soil into concrete.

POLIOENCEPHALOMALACIA

Polioencephalomalacia, confirmed by fluorescence of brain under ultraviolet light, was diagnosed as the cause of death of calves on two properties.

RICKETS IN PHEASANT CHICKS

Ten of a batch of 30 Lady Amherst pheasant chicks developed leg weakness and died within three weeks of hatching. On autopsy, bone loss, extensive fractures and enlarged epiphyses were found. This was consistent with rickets of presumed nutritional origin (vitamin D deficiency). The chicks were being fed on commercial turkey starter.

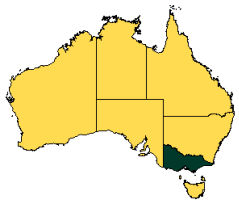
PESTIVIRUS IN CALVES

Over a few days, three of a group of 32 castrated eight-month-old calves became ill and died. Signs included pyrexia, diarrhoea and dehydration. Multi-focal erosive stomatitis and dermatitis suggested mucosal disease due to pestivirus infection although these changes are more usually distributed throughout the digestive system. This diagnosis was confirmed by positive serology.

PARASITISM IN LAMBS

Over a one-week period, 70% of a mob of 400 six-month-old lambs became ill. Six died and two were submitted to the laboratory. Clinical signs were a sudden onset of diarrhoea, weight loss, weakness and dehydration. There were no specific gross or microscopic changes but total worm counts from the abomasum and small intestines exceeded 20 000 in both lambs. The worms were mostly *Trichostrongylus* spp.

Victoria



Contributed by:
Tristan Jubb
DNRE, Victoria

DERMATITIS IN PIGS

About 200 of 600 finisher pigs on a farm in central Victoria developed large areas of red skin affecting the scrotum, perineum, flank, sides and ears, and white–grey diarrhoea in the week before intended sale. This was a rarely seen outbreak of faecal scald (similar to nappy rash in babies). It is thought that alteration of the flora of the large intestines (usually by an in-feed anti-microbial) allows bacterial overgrowth, production of high concentrations of lactic acid, and the development of osmotic diarrhoea and acid faeces. Faecal pH in this case was 5.2. Fluid faeces contacting the skin caused irritation, inflammation and often secondary bacterial infection. Porcine dermatitis/nephropathy syndrome (PDNS) is a differential diagnosis and was ruled out after autopsy of two badly affected pigs. Treatment involves hosing down the pigs and pens to improve hygiene. In previous reports of this condition there has always been a strong association between an in-feed antimicrobial and appearance of dermatitis. In this case, the pigs were on non-medicated pre-sale feed. A

group of pigs one week younger than the affected group was in an adjacent finishing room, supposedly on the same feed, but was unaffected. The severely affected pigs were withheld from sale until the inflammation had subsided.

FENUGREEK STUBBLES STAGGER

Investigations are continuing into an annually recurring stagger syndrome affecting sheep grazing fenugreek stubbles (*Trigonella foenum-graecum*) in north-western Victoria. Two flocks were affected in the Wimmera region this summer and autumn. Fenugreek is a legume closely related to medic, and is mainly grown in Victoria as a winter spice seed crop. The seeds are used as food flavouring and are incorporated in some pharmaceuticals. After harvesting in December to January, the stubbles provide good grazing for sheep. Occasionally after rain or heavy dew in summer or early autumn, a stagger syndrome appears in grazing sheep and often progresses to recumbency with anorexia and death within a few days. Some sheep are affected only by mild limb incoordination, others are severely affected and goosestep, and some lose all limb control becoming spastic. However, affected sheep remain bright, alert and responsive until the late stages. Sheep that were normal when removed from fenugreek stubbles when other sheep had been affected developed the stagger syndrome up to two weeks later after being driven. Four healthy ewes developed the syndrome during or shortly after lambing. Fenugreek grain contains 4-hydroxy isoleucine, which has been shown to have an antidiabetic affect by lowering blood glucose levels, and this has been seen here in sheep grazing the mature crop. However, sheep affected with the stagger syndrome in Victoria have had normal blood glucose levels but have shown histological evidence of a peripheral neuropathy affecting the mid to lower limbs.

LESSER LOOSESTRIFE DEATHS

In early January, on two properties in north-western Victoria, up to 200 weaner sheep died within a week of grazing barley stubble heavily infested with the crop weed lesser loosestrife (*Lythrum hyssopifolia*). Some surviving sheep suffering anorexia, abdominal pain and loss of condition were destroyed. Histology revealed liver and kidney pathology consistent with other reports of *Lythrum* poisoning. It is interesting that older ewes had grazed the stubble paddock immediately before the weaners without ill effect. This suggests that the young inexperienced sheep may have sought out the green loosestrife, which was largely ignored by the ewes. Sheep are known to eat small amounts of the plant quite safely. The late wet spring and early summer favoured the weed, which grew even after pre- and post-emergent herbicides had been applied to the crop.

INFECTIOUS LARYNGOTRACHEITIS

Infectious laryngotracheitis (ILT) was confirmed on three small poultry properties in central and north-eastern Victoria. Clinical signs included coughing, open mouth-breathing, and blood stained exudate in the nostrils and mouth. Many birds were found dead without premonitory signs. Morbidity rates were approximately 60% and mortality rates were 10–15%. Post mortem examination revealed haemorrhages within the tracheal lumen and caseous plugs within the larynx and trachea. Histopathological findings included occasional syncitia formation, margination of chromatin, and eosinophillic intranuclear inclusions. ILT virus was isolated from a number of birds. The affected farms were quarantined for 42 days and a vaccination program implemented.

BOVINE TUBERCULOSIS

Mycobacterium bovis was suspected as the cause of granulomas submitted from two unrelated beef cattle slaughtered at an abattoir in January. The two source herds are under quarantine. Testing of the remaining eligible animals in the two herds has not confirmed infection in either herd. To date, testing of 638 cattle has produced five reactors, all of which have been slaughtered with negative gross post mortem and histopathology results (cultures of lymph nodes are pending). Further testing is scheduled for a number of traceback and neighbouring properties.

EQUINE DISEASE REPORTS

Remarkably, there have been no horses exhibiting serological evidence (high IgM) of recent infection with Ross River virus. Blood has been submitted from suspect cases, but only high IgG titres have been apparent.

Strangles was diagnosed in thoroughbred weanlings in central Victoria.

Equine coital exanthema was reported in thoroughbred mares in central Victoria.

Serological tests for Hendra virus were negative in 30 horses presented for export.

No evidence of *Bacillus anthracis* was found in smears submitted from a horse that died suddenly with a swollen head and neck and had blood coming from its anus and mouth.

Salmonella typhimurium 9 was isolated from a pony with diarrhoea that died within 36 hours of onset.

JOHNE'S DISEASE IN DEER

An extensive testing program for Johne's disease is currently being carried out on eight deer properties in Victoria where the disease has been suspected to occur. Samples of faeces and tissues were collected from

approximately 1300 animals for bacteriological and/or histopathological examination. At this stage, the disease has been confirmed on five of the eight farms examined.

PERENNIAL RYEGRASS STAGGERS

Major sheep and minor cattle losses from perennial ryegrass staggers occurred throughout the Western District. There were also reports of minor losses in Gippsland.

In the Western District, the sheep losses ran to tens of thousands, with many hundreds of properties involved. Up to 10% of some flocks died with many animals having to be destroyed. Farmers with alternative pastures or resources for feed-lotting could minimise the losses and disruption to management caused by the disease. Unusually high numbers of sheep have been found cast in the paddock without the stimulation of mustering. Many have perished in dams and troughs. Most reports involve sheep staggering and going down when being driven with unusually poor recovery rates after being left undisturbed. There have been few cattle losses, usually by misadventure, but management procedures such as pregnancy testing and sales have been delayed due to staggering and flighty behaviour of cattle. The disease is caused when increases in alkaloids produced by fungal endophytes normally found in the perennial ryegrass reach toxic concentrations. High endophyte frequency in perennial ryegrass is common in Victorian pastures. It is speculated that the extended rain from late spring and early summer built up a bank of ryegrass that when stressed by the early autumn drought resulted in the ryegrass endophyte producing high concentrations of the alkaloids lolitrem B and ergovaline.

HENDRA VIRUS IN FLYING FOXES

Two of three grey-headed flying foxes returned positive srum neutralisating test (SNT) results for Hendra virus when blood samples were collected while the animals were anaesthetised for attaching a tracking device. Flying foxes have recently been seen in increasing numbers around orchards on the fringe of Melbourne. There is a large population (estimated at more than 70 000) at the Royal Botanic Gardens in the centre of Melbourne, and many of these animals spend the day roosting in the gardens and then travel to the outskirts of the city to feed. A large study of flying foxes in the gardens found that 19% of approximately 100 animals tested were positive for neutralising antibodies to Hendra virus. So far, virus has not been recovered from such positive animals. Hendra virus has been isolated from captured wild flying foxes on only one occasion despite considerable effort. Experimental infection of flying foxes has shown that flying foxes become infected and excrete virus in their placental fluids. Antibody titres develop quickly in experimentally infected bats and virus is difficult to isolate in experimentally infected flying foxes. It is believed that once infected, the flying foxes may excrete virus in their urine. No human cases of Hendra virus have been associated with contact with fruit bats or flying foxes.

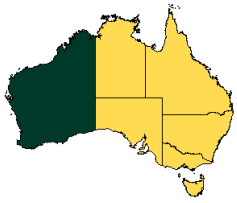
ADVANCES IN IMMUNOHISTOCHEMICAL TESTING

The Victorian Institute of Animal Science at Attwood has introduced immunohistochemical testing to aid the diagnosis of a number of infectious diseases. The test detects viral or bacterial antigen in formalin-fixed histological preparations. The procedure uses a two-step indirect immunoperoxidase test, with a primary rabbit or mouse antibody, followed by a secondary antibody that attaches to the first. The secondary antibody is conjugated to a large polymer to amplify the reaction together with horseradish peroxidase. AEC (3-amino-9-ethylcarbazole) is used to produce a colour reaction in the histological sections. Currently, the technique is used to detect a range of *Mycobacterium* spp. including *M. avium* and *M. paratuberculosis* using a rabbit polyclonal anti-*Mycobacterium* spp. This antibody was commercially purchased and detects approximately 100 BCG antigens of various *Mycobacterium* spp. The major advantage of the technique over other diagnostic tests is that bacterial or viral antigen can be viewed simultaneously with histological lesions.

ABALONE MORTALITIES

Mortalities in abalone were reported from a farm in south-western Victoria in January. Deaths, attributed to an unclassified *Vibrio* spp., ranged from 2–5% in four of 90 land-based marine tanks. Three tanks contained about 15 000 black-lipped abalone each, and the other tank contained green-lipped abalone. Although tanks on the farm contained 1-, 2- or 3-year-old abalone, affected tanks contained only 2-year-old abalone. Histologically, there was necrosis and suppurative inflammatory lesions in the foot of each abalone and the *Vibrio* spp. was cultured from these lesions in both of the abalone species. The *Vibrio* species isolated was most closely related to *Vibrio vulnificus* biotype 2. Samples have been submitted to DPIWE, Tasmania, for further classification. The *Vibrio* spp. differs from other species that have caused mortalities in abalone in Victoria, namely *V. harveyi*, *V. parahaemolyticus* and *V. alginolyticus*. Antibiotic sensitivity testing showed the bacteria to be sensitive to tetracycline, and mortalities decreased dramatically within four days following the administration of antimicrobials.

Western Australia



Contributed by:
Richard Norris
WA Department of Agriculture

Laboratory testing was conducted on 516 investigations of animal disease during the quarter. Of these, 145 were cost-recovery (private benefit) cases and 371 were charge-exempt (public benefit and therefore funded directly by the Government). There were seven exotic disease alerts and 13 notifiable diseases reports during the quarter.

NOTIFIABLE DISEASES

Eleven category C (discretionary quarantine) and two category B (mandatory quarantine) notifiable diseases were reported during the quarter. There were four cases of mucosal disease in cattle, two of annual ryegrass toxicity in sheep, and one case each of infertility associated with bovine genital campylobacteriosis, *Brucella ovis* infection in rams, fowl cholera in poultry, listeriosis in sheep and salmonellosis in poultry. The category B notifications were for repeat detections of cattle tick in the Pilbara.

EXOTIC DISEASE ALERTS

All seven cases were category 1 alerts (low index of suspicion). There were four alerts for avian influenza/ Newcastle disease and all tested negative at the Australian Animal Health Laboratory, Geelong. A pig specimen from Medina was checked for porcine reproductive respiratory syndrome (PRRS) and both classical and African swine fever, with negative results, and a pig specimen from Kununurra tested negative for Japanese encephalitis. Sheep specimens from Kojonup were checked for bluetongue and found to be negative.

DRY SEASON SYNDROMES IN SHEEP

Despite widespread early summer rain in sheep grazing areas of the South-West Land Division, there were numerous confirmed reports of nutritional myopathy (vitamin E deficiency), oxalosis (mostly due to iceplant or mintweed), annual and perennial ryegrass staggers, and polioencephalomalacia. Less frequent were reports of salmonellosis, caltrop poisoning and fluoroacetate (various *Gastrolobium* spp.) poisoning.

IRONWOOD POISONING SUSPECTED

Deaths in goats at Kununurra were associated with the consumption of ironwood (*Erythrophloeum chlorostachys* or Cooktown Ironwood). Most of the intestinal tract was haemorrhagic grossly and this was shown histologically to be mostly in the submucosa, largely sparing the lining of the gut. The plant is known to contain highly cardiotoxic diterpenoid alkaloids (erythrophleine) and poisoning can be associated with scouring and free blood in the intestines. It is said to have caused considerable losses in the past, in cattle, sheep, horses, camels and goats. It must be distinguished from bluetongue.

PORCINE DERMATITIS NEPHROPATHY

Two female pigs, 15 weeks of age and 37 kg, failed to gain weight during a feeding trial at Medina Research Station and both developed numerous dark crusty skin lesions up to 1 cm in diameter. They were submitted to Murdoch University for autopsy. These animals had fibrinoid vasculitis in most visceral organs but particularly in the skin, where they had caused small infarcts corresponding to the lesions seen grossly. The kidney had similar vascular lesions and acute glomerular damage. The lesions were consistent with those described for a new disease, dermatitis nephropathy syndrome (DNS) which, together with post-weaning multisystemic wasting syndrome (PMWS) in piglets has been associated with porcine circovirus type 2 (PCV2) infection. PMWS and DNS are causing substantial damage to pig production in the northern hemisphere, especially in the United Kingdom. Although PMWS has a clear association with PVC2 infection, the case for DNS is not as clear, with some studies implicating *Pasteurella* infection. The Medina cases were shown to be free of antibody to swine fever and porcine reproductive respiratory syndrome (PRRS). Unfortunately, tissues were not saved for PCV2 testing. Further investigations will be carried out should further cases arise.

Quarterly Disease Statistics

Quarterly disease statistics — control activities

BOVINE BRUCELLOSIS

Although bovine brucellosis is now exotic to Australia, surveillance is maintained through abortion investigations and miscellaneous testing of cattle for export or other reasons. A total of 146 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 1.

Table 1: Surveillance for bovine brucellosis

	Abortion investigations		Test for other reasons	
	Tests	+ve	Tests	+ve
Jan–Mar 01	139	0	9100	0
Apr–Jun 01	262	0	13325	0
Jul–Sep 01	181	0	11995	0
Oct–Dec 01	128	0	7008	0
Jan–-Mar 02	146	0	5125	0
NSW	8	0	262	0
NT	0	0	216	0
QLD	15	0	2001	0
SA	6	0	53	0
TAS	5	0	29	0
VIC	0	0	363	0
WA	112	0	2201	0

TUBERCULOSIS

Australia was declared a Free Area for bovine tuberculosis (TB) on 31 December 1997. The National Granuloma Submission Program is the major surveillance tool for TB. Table 2 summarises results from the program. Details of the two positive granulomas and of two suspicious granulomas can be found in the State reports in this issue of *AHSQ*.

Table 2: Results of the National Granuloma Submission Program

	Granulomas submitted	TB +ve
Jan–Mar 01	984	0
Apr–Jun 01	1246	0
Jul–Sep 01	1532	0
Oct–Dec 01	1506	0
Jan–-Mar 02	1060	2
NSW	173	0
NT	2	1
QLD	509	1
SA	91	0
TAS	4	0
VIC	133	0
WA	148	0

JOHNE'S DISEASE

Johne's disease (JD) occurs primarily in dairy cattle and sheep in Australia and to a lesser extent in beef cattle, goats, deer and camelids. JD occurs in NSW, Victoria, Tasmania and South Australia. Surveillance programs have not identified endemic JD in Queensland, Western Australia and Northern Territory, and active measures are taken to stamp-out any incursions. Table 3 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 JD 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 4.

Table 3: Herds/flocks with JD at 31 March 2002

STATE	Cattle	Sheep	Goats	Deer	Alpaca	Total
NSW	146	766	12	0	1	925
NT	0	0	0	0	0	0
QLD #	1	0	0	1	0	2
SA	44	54	0	1	0	99
TAS	15	31	4	0	0	50
VIC	1226	44	8	6	4	1288
WA	0	0	0	0	0	0
AUS	1432	895	24	8	5	2362

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

Table 4: Herds/flocks with a JDMAP status of at least MN1/TN1 status at 31 March 2002

STATE	Cattle	Sheep	Goats	Alpacas	Total
NSW	935	361	49	110	1455
NT#	0	0	0	0	0
QLD#	0	8	0	0	8
SA	230	226	10	33	499
TAS	130	31	2	0	163
VIC	296	147	6	36	485
WA#	0	0	0	0	0
AUS	1591	773	67	179	2610

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

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 31 March 2002

	NSW	NT	QLD	SA	TAS	VIC	WA	AUS
Free	1401	0	1281	839	679	7891	360	12 451
Herds	1414	0	1289	840	741	8017	360	12 661

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 31 March 2002

NSW	NT	QLD	SA	TAS	VIC	WA	AUS
953	0	59	482	103	660	86	2343

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 7.

Table 7: Serological testing from routine submissions to State and Territory laboratories

	Akabane		Bluetongue		Bovine ephemeral fever		Enzootic bovine leucosis		Equine infectious anaemia		Equine viral arteritis	
	Tests	+ve	Tests	+ve	Tests	+ve	Tests	+ve	Tests	+ve	Tests	+ve
Jan–Mar 01	1143	457	8588	285	1183	182	10812	2	872	11	328	32
Apr–Jun 01	4240	707	11399	443	3151	286	17340	9	1205	11	398	1
Jul–Sep 01	1971	318	7853	303	2130	300	10268	0	1268	27	370	5
Oct–Dec 01	7827	352	8138	242	2564	361	7298	2	1167	11	547	16
Jan–Mar 02	2732	410	4826	140	1896	318	3640	0[#]	755	0	414	22
NSW	10	1	843	2	5	0	89	0	292	0	156	17
NT	595	237	683	87	965	185	0	0[#]	0	0	0	0
QLD	343	169	2662	51	310	126	190	0	148	0	16	0
SA	129	0	208	0	9	0	0	0	6	0	6	0
TAS	1	0	3	0	0	0	868	0	0	0	0	0
VIC	122	0	301	0	270	0	324	0	223	0	169	5
WA	1532	3	126	0	337	7	2169	0	86	0	67	0

to printed version

Quarterly disease statistics — surveillance activities

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

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

Table 8: Salmonella notifications, 1 January to 31 March 2002

Serovars	avian	bovine	canine	equine	feline	ovine	porcine	other	Total
S. Bovismorbificans	0	6	0	1	1	0	0	0	8
S. Dublin	0	18	1	1	0	0	0	0	20
S. Infantis	0	0	1	0	1	1	1	0	4
S. Typhimurium	13	25	6	2	0	9	6	1	62
Other	3	16	18	8	5	0	45	20	115
Total	16	65	26	12	7	10	52	21	209

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 9).

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 Ageing (Internet address: http://www.health.gov.au/pubhlth/cdi/cdihtml.htm)

Table 9: Notifications of zoonotic diseases in humans

Disease	Q1-01	Q2-01	Q3-01	Q4-01	Q1-02	Current quarter						
					AUST	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Brucellosis#	7	2	5	4	12	0	0	0	12	0	0	0	0
Hydatidosis	11	4	4	6	8	0	nn	0	6	0	0	0	2
Leptospirosis	90	67	59	38	71	0	13	1	51	0	1	5	0
Listeriosis	22	6	11	11	15	0	3	0	5	0	0	3	4
Ornithosis	31	27	35	37	17	0	4	0	nn	2	0	6	3
Q fever	193	212	142	169	183	0	55	1	104	5	0	11	7

nn disease is not notifiable in these States

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

NATIONAL TSE SURVEILLANCE 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 bovine spongiform encephalopathy (BSE) and scrapie should they occur. The National TSE Surveillance Program (NTSESP) is an integrated national program jointly funded by industry and governments to demonstrate Australia's ongoing freedom from BSE and scrapie, and to provide early detection of these diseases should they occur. Table 10 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 10: Number of animals tested under NTSESP (All were negative for TSE)

	Jan – Mar 01		Apr – Jun 01		Jul – Sep 01		Oct – Dec 01		Jan – Mar 02	
	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep
NSW	26	40	37	52	43	64	14	33	15	15
NT	6	0	2	0	14	0	4	0	0	0
QLD	42	14	54	7	82	19	38	14	33	3
SA	9	9	1	12	5	14	1	18	8	28
TAS	2	5	3	1	3	2	1	5	0	0
VIC	10	15	53	33	37	44	6	15	16	24
WA	12	37	2	34	14	31	3	29	3	18
AUS	107	120	152	139	198	174	67	114	75	88

NORTHERN AUSTRALIA QUARANTINE STRATEGY

In recognition of the special quarantine risks associated with Australia's sparsely populated northern coastline, AQIS conducts an animal disease surveillance program as an integral component of the Northern Australia Quarantine Strategy (NAQS). The NAQS surveillance program provides early warning of disease threats to livestock industries, and in some cases human health. NAQS surveillance activities include both offshore and onshore components. Tables 11 and 12 summarise NAQS activity over the past five quarters.

Contact: David Banks, Biosecurity Australia

Table 11: Summary of recent NAQS activity

	Jan – Mar 01		Apr – Jun 01		Jul – Sep 01		Oct – Dec 01		Jan – Mar 02		Notes
	Tested	+ve	Tested	+ve	Tested	+ve	Tested	+ve	Tested	+ve	
Aujeszky's disease	18	0	47	0	246	0	26	0	0	0	
Classical swine fever	18	0	47	0	169	0	26	0	0	0	
Japanese encephalitis	249	26	336	26	47	0	245	0	321	12	a
Porcine reproductive and respiratory syndrome	18	0	47	0	175	0	26	0	0	0	
Surra	0	0	276	0	283	0	99	0	14	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 sites on islands in the Torres Strait, and for the first time on the mainland at the tip of Cape York Peninsula. Since 1998, sentinel pigs at Badu Island have sero-converted each wet season and sero-conversions have been detected on other central Torres Strait islands in surveys. No further sero-conversions have been recorded at the mainland sentinel pig locations.

PORTS SURVEILLANCE PROGRAM

Biosecurity Australia conducts the Ports Surveillance Program for *Culicoides*, screw-worm fly, exotic bees and bee mites. Seaports, particularly those servicing returning livestock vessels and those dealing with high risk deck cargo such as timber, mining equipment and containers, are considered to be high risk locations for incursions of such pests. The program increases the capacity to detect any incursions at an early stage, and this in turn increases the probability of a successful eradication program. The *Culicoides* surveillance also supports the livestock export trade by confirming the continuous or seasonal absence of *Culicoides* vectors at ports from which livestock are loaded. Table 12 shows the number of times that insect trap sites were inspected for the Port Surveillance Program.

Contact: David Banks, Biosecurity Australia

Table 12: Number of inspections of insect traps

	Jan – Mar 01	Apr – Jun 01	Jul – Sep 01	Oct – Dec 01	Jan – Mar 02
Port surveillance					
Asian bees	24	23	30	25	40
Culicoides	42	42	33	32	32
Screw-worm fly	44	42	35	36	35
NAQS					
Screw-worm fly	94	32	48	6	150

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 to secure 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 13 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 13: Australian Milk Residue Analysis Survey, 1 January to 31 March 2002

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	18	0	0	0	11	0	12	0	5	0	100	0	9	0	155
Cadmium	0	5	0	0	0	3	0	2	0	0	0	17	0	2	0	29
Lead	0	5	0	0	0	3	0	2	0	0	0	17	0	2	0	29
Mercury	0	5	0	0	0	3	0	2	0	0	0	17	0	2	0	29
Organochlorines	0	3	0	0	0	1	0	1	0	1	0	16	0	1	0	23
Organophosphates	0	3	0	0	0	1	0	1	0	1	0	16	0	1	0	23
PCBs	0	3	0	0	0	1	0	1	0	1	0	16	0	1	0	23
Synthetic pyrethroids	0	3	0	0	0	1	0	1	0	1	0	16	0	1	0	23
Triclabendazole	0	18	0	0	0	11	0	12	0	5	0	100	0	9	0	155

NATIONAL RESIDUE SURVEY

Of 3751 samples tested during the quarter for agricultural and veterinary chemicals, nine (0.24%) had residues above the maximum residue limit (MRL) or maximum level (ML). The detections were in four chemical groups — metals (environmental contaminants), hormones, anthelmintics and antimicrobials. Table 14 summarises the results.

The two metal detections in sheep were for cadmium at 3.0 and 1.9 mg/kg. The lower level was below the NRS 'level of action' and an investigation was not initiated. The result of the investigation into the second detection was inconclusive due to the ongoing problem of individual identification and traceability of sheep.

Two residues of 19-nortestosterone were detected in sheep, but since the concentrations were consistent with endogenous levels of this hormone, no further action was necessary. The traceback investigation of a boldenone detection in a ram was inconclusive and most likely due to endogenous production or incorrect property identification.

Two residues of moxidectin were detected in goats. Investigations indicated the residues were due to off-label use of anthelmintics for internal parasite control. Two residues of sulphadimidine were detected in pigs. One investigation revealed staff negligence was the cause of the contamination due to mistaken feeding of medicated feed and the second investigation is still pending. 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 14: National Residue Survey, 1 January to 31 March 2001
Each pair of figures gives the number of samples above 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 71	0 0	0 75	0 11	0 5	0 36	0 11	0 209
pigs	0 14	0 0	0 3	0 9	0 0	0 5	0 7	0 38
sheep	0 122	0 0	0 12	0 17	0 2	0 64	0 34	0 251
other	2 15	0 0	0 14	0 4	0 0	0 14	0 3	2 50
Total	2 222	0 0	0 104	0 41	0 7	0 119	0 55	2 548
Antimicrobials								
cattle	0 93	0 0	0 103	0 14	0 6	0 59	0 16	0 291
pigs	2 116	0 1	0 71	0 51	0 0	0 82	0 45	2 366
poultry	0 0	0 0	0 0	0 0	0 0	0 2	0 0	0 2
sheep	0 248	0 0	0 13	0 31	0 6	0 66	0 84	0 448
other	0 8	0 0	0 10	0 2	0 0	0 19	0 1	0 40
Total	2 465	0 1	0 197	0 98	0 12	0 228	0 146	2 1147
Growth promotants								
cattle	0 116	0 0	0 127	0 24	0 8	0 87	0 13	0 375
pigs	0 23	0 0	0 9	0 15	0 0	0 21	0 10	0 78
sheep	2 107	0 0	0 12	0 21	0 2	1 41	0 33	3 216
other	0 2	0 0	0 5	0 3	0 0	0 12	0 1	0 23
Total	2 248	0 0	0 153	0 63	0 10	1 161	0 57	3 692
Insecticides								
cattle	0 120	0 2	0 132	0 23	0 7	0 79	0 17	0 380
pigs	0 34	0 0	0 6	0 4	0 0	0 15	0 14	0 73
poultry	0 0	0 0	0 0	0 0	0 0	0 3	0 0	0 3
sheep	0 193	0 0	0 16	0 29	0 3	0 87	0 58	0 386
other	0 31	0 0	0 28	0 11	0 0	0 18	0 5	0 93
Total	0 378	0 2	0 182	0 67	0 10	0 202	0 94	0 935
Metals								
cattle	0 28	0 0	0 26	0 4	0 1	0 19	0 2	0 80
pigs	0 13	0 0	0 6	0 6	0 0	0 6	0 7	0 38
poultry	0 0	0 0	0 0	0 0	0 0	0 3	0 0	0 3
sheep	0 39	0 0	0 2	0 4	0 0	1 20	1 11	2 76
other	0 14	0 0	0 14	0 6	0 0	0 4	0 4	0 42
Total	0 94	0 0	0 48	0 20	0 1	1 52	1 24	2 239
Miscellaneous								
cattle	0 22	0 0	0 21	0 4	0 1	0 22	0 1	0 71
pigs	0 7	0 0	0 12	0 3	0 0	0 10	0 6	0 38
sheep	0 39	0 0	0 4	0 4	0 0	0 16	0 12	0 75
other	0 4	0 0	0 1	0 0	0 0	0 1	0 0	0 6
Total	0 72	0 0	0 38	0 11	0 1	0 49	0 19	0 190

SUSPECT EXOTIC OR EMERGENCY DISEASE INVESTIGATIONS

There were 32 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 January to 31 March 2002

Disease	Species	State	Month	Response	Finding
Anthrax	bovine	VIC	Feb	2	clostridial disease
Avian influenza	avian	VIC	Mar	2	infectious laryngotracheitis
Avian influenza	avian	NSW	Jan	2	negative
Bluetongue	ovine	VIC	Mar	2	wasting disease
Bluetongue	ovine	WA	Jan	3	negative
Bovine tuberculosis	bovine	VIC	Mar	5	pending laboratory confirmation
Bovine tuberculosis	bovine	VIC	Mar	5	negative
Canine babesiosis	canine	VIC	Mar	2	negative
Classical swine fever	porcine	TAS	Feb	3	negative
Classical swine fever	porcine	WA	Feb	3	negative
Foot-and-mouth disease	bovine	VIC	Mar	2	mucosal disease
Foot-and-mouth disease	bovine	VIC	Mar	0	negative
Foot-and-mouth disease	bovine	NT	Jan	2	photosensitisation/liver damage
Hendra virus	equine	QLD	Jan	3	negative
Hendra virus	equine	QLD	Mar	3	negative
Japanese encephalitis	porcine	WA	Feb	3	negative
Lumpy skin disease	bovine	QLD	Feb	2	dermatitis of unknown aetiology
Maedi–visna	ovine	SA	Feb	3	lungworm and lymphosarcom
Newcastle disease	avian	NSW	Feb	3	infectious laryngotracheitis
Newcastle disease	avian	NSW	Feb	3	negative
Newcastle disease	avian	NSW	Jan	3	Marek's disease
Newcastle disease	avian	NSW	Feb	3	Marek's disease
Newcastle disease	avian	NSW	Feb	3	negative
Newcastle disease	avian	QLD	Jan	3	mycoplasmosis
Newcastle disease	avian	QLD	Mar	1	hepatitis
Newcastle disease	avian	WA	Mar	3	negative
Newcastle disease	avian	WA	Jan	3	negative
Newcastle disease	avian	WA	Jan	3	negative
Piscirickettsiosis	piscine	TAS	Feb	2	Rickettsia-like organisms (not piscirickettsiosis)
Porcine circovirus type 2	porcine	NSW	Feb	1	negative
Rabies	feline	NSW	Mar	3	negative
Screw-worm fly	canine	NT	Feb	2	negative, *Chrysomya saffranea* larvae

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 person indicated below should be contacted if further details are required.

Name	Role	Phone	Fax	e-mail
Chris **Baldock**	National NAHIS Coordinator	07 3255 1712	07 3844 5501	chris@ausvet.com.au
David **Banks**	Northern Australia Quarantine Strategy	02 6272 5444	02 6272 3399	David.Banks@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 6203 3999	02 6232 5511	geoff.neumann@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

Animal Health Surveillance

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