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Animal Health Surveillance

1 October to 31 December 2000 QUARTERLY REPORT

Preface

Recognition that bovine spongiform encephalopathy (BSE) is more prevalent on continental Europe than was previously thought will have consequences for Australia, despite Australia being free of BSE. Public concern over the disease is increasing. The major article in this edition outlines some of Australia's recent initiatives to ensure that the disease does not enter Australia in animal-based products.

Animal Health Surveillance Quarterly includes highlights of disease surveillance activities, items of interest from States and Territories, and data from monitoring and surveillance and programs that report to Australia's National Animal Health Information System (NAHIS). Only summary information is recorded in NAHIS, with detailed data being kept 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

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Bovine spongiform encephalopathy

The occurrence of bovine spongiform encephalopathy (BSE) in the United Kingdom, and its spread into Europe by way of exports of live animals and contaminated meat and bone meal (MBM), has been a defining event in food safety and veterinary public health.

Actions taken by Australian agricultural and human health officials include reviewing the risk posed by imported foods, tracing of imported animals and products of bovine origin from BSE-affected countries, evaluation of the United Kingdom's Phillips Report, and the establishment of a National Health and Medical Research Council (NHMRC) Expert Advisory Group on TSEs. Other initiatives have focused on evaluation of rapid post mortem tests for BSE and on development and evaluation of tests for detecting non-compliance with the ruminant feed ban.

BACKGROUND

BSE was first recognised in 1986 when pathologists identified degenerative changes in brain samples from cattle similar to those caused by scrapie in sheep. It was originally thought that BSE arose in the 1980s from the scrapie agent crossing the species barrier and entering cattle through MBM prepared from sheep. It is now thought that the disease arose in the 1970s but from an unknown source in a ruminant animal. Epidemiological studies have confirmed that the rapid spread of BSE was due to the presence of contaminated MBM in cattle feed.

To put the BSE quarantine risk to Australia into context, it's necessary to understand how the disease occurs and what it does. BSE is caused by a prion, a kind of protein that is associated with normal cell walls. It appears that prions

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can misfold, or change structure, leading to disease that is characterised by the loss of nerve cells, a spongy appearance of grey matter, the accumulation of abnormal protein, and the activation of inflammatory cells in the brain of affected animals. Prions are thought to be transmitted in cattle primarily by ingestion of infected tissues, but the potential for other routes of transmission is reflected in some of the preventive measures taken by Australia.

Diseases related to BSE, called transmissible spongiform encephalopathies (TSEs), have been known for a long time but are relatively uncommon. Scrapie has been found in sheep in many countries over the past 200 years. Other TSEs in animals include mink spongiform encephalopathy and chronic wasting disease of elk and deer. Some TSEs have been observed in cats and zoo animals, and are thought to be derived from BSE in feed. All animal TSEs are exotic to Australia. Following the single occurrence of scrapie in Australia, in a flock of imported sheep in 1952, all sheep in the flock were destroyed and the farm placed in quarantine. TSE caused the death of a recently imported cheetah at the Broome Zoo in 1992.

A number of TSEs occur in humans — Creutzfeldt–Jakob disease (CJD), kuru, fatal familial insomnia, and sporadic fatal insomnia. CJD occurs in about one per million people. A new variant of CJD (vCJD), which typically occurs in younger people than 'normal' CJD, was first reported in the United Kingdom in 1995. A possible link between BSE and vCJD was made the next year, and scientific evidence is mounting to link exposure to the BSE agent to the development of vCJD.

By the end of 2000, some 88 cases of vCJD had been diagnosed in the United Kingdom and two in France. Because of the high number of people moving between Europe and Australia and the long incubation period for vCJD, it is possible in the future that a person may be diagnosed in Australia with vCJD contracted in the United Kingdom (or other parts of Europe).

ACTIONS TO PREVENT TSEs ENTERING AUSTRALIA

Quarantine requirements in place since 1966 prohibit imports into Australia of stockfeed of animal origin (including MBM) from all countries except New Zealand (which is also free of BSE and scrapie).

In response to the BSE outbreak, Australia banned imports of live cattle from the United Kingdom and Ireland in 1988. A tracing program confirmed that Australia had imported 131 cattle from the United Kingdom and Ireland between 1980 and 1988. There has been no indication of any nervous disorders in any of these imported cattle, which have now been in Australia for a period considerably longer than the average incubation period of BSE. In 1991, Australia extended the restrictions on live cattle to include France and Switzerland following reports of BSE in those countries. Australia only imports cattle from BSE-free countries.

In 1990, Australia commenced a surveillance program involving the examination of the brains of cattle investigated for neurological disease. This additional surveillance complemented information from routine monitoring of laboratory accessions by histopathological examination to exclude other exotic diseases that cause neurological signs, such as rabies. The National Transmissible Spongiform Encephalopathy Surveillance Program (NTSESP) enhanced this surveillance from 1998 to meet the monitoring and surveillance requirements of international animal health codes. 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 should they occur. Details of this program are available on the internet (at http//:www.aahc.com.au/programs/ntsesp).

Australian livestock industries adopted a voluntary ban on the feeding of ruminant-derived MBM to ruminants in 1996, in response to recommendations made by the World Health Organization. This was strengthened in 1997 by legislation in all States and Territories enforcing a compulsory ban on the feeding of ruminant-derived MBM to ruminants. In 1999, this ban was extended to cover the feeding of specified mammalian materials to ruminants in all States and Territories. This decision ensured that Australian ruminant feeding restrictions were in accordance with international animal health standards. Periodic audits of renderers and feed manufacturers in Australia have confirmed that there has been no deliberate inclusion of MBM in ruminant feeds.

ACTIONS TO PREVENT vCJD

When the link between BSE and vCJD was suggested, Australian animal health and human health officials reviewed the adequacy of existing controls, including quarantine restrictions for:

- animals, genetic material, and animal products (including MBM);
- pharmaceutical and biological products potentially containing bovine material;
- cosmetics potentially containing bovine material; and
- imported beef and beef products for use as food.

The Department of Health and Aged Care has been addressing the human quarantine issues. Blood donations are not accepted from people who have lived in the United Kingdom for more than a cumulative period of six months between 1980 and 1996 although there is no evidence of transmission of vCJD via blood. This ban has recently been extended to include Europe (but with different conditions of period of residency).

Specified foods containing bovine material of British origin have been prohibited into Australia since 1996 because of the potential risk of vCJD in humans. In response to recent reports of BSE in a number of other European countries, human health authorities in Australia and New Zealand placed a temporary suspension on imports of beef and beef products from more than 30 European countries and advised retailers to withdraw voluntarily these products from their shelves. Further information about these restrictions, which came into effect in January 2001, is available via a special information telephone line (1800 200 701) or on the internet (at www.health.gov.au, www.anzfa.gov.au or www.anzfa.govt.nz). Australia is now developing certification conditions that will need to met for these products to be exported to Australia.

EXPERT COMMITTEE ON TSE

Government departments and agencies — AFFA (Product Integrity and Animal and Plant Health, the Australian Quarantine and Inspection Service, and Biosecurity Australia) and the Department of Health and Aged Care (Therapeutic Goods Administration, Australia New Zealand Food Authority, and the National Registration Authority for Agricultural and Veterinary Chemicals) — have been monitoring all TSEs for a number of years. The beef industry has also been closely involved through the industry–government SAFEMEAT coalition.

At the end of 2000, Australia's peak public health advisory and medical research body, NHMRC, established an expert committee on TSEs. The committee is chaired by Professor Graeme Ryan and has 15 other members including two veterinarians, Drs Kevin Doyle and Chris Baldock. The Australian Chief Medical Officer and Chief Veterinary Officer are observers. The Committee is expertise-based and its purpose is to provide expert and timely advice to Australian governments on all matters necessary to prevent and limit the spread of variant vCJD and other TSEs in Australia. The Committee will focus on how such diseases might enter Australia and be transmitted to humans within Australia. It will also explore the requirements for, and possible impediments to, effective surveillance systems in Australia for TSEs. It will operate by in-person meetings every second month and teleconferences every other month.

PHILLIPS INQUIRY INTO BSE

The Phillips Inquiry into BSE and vCJD in the United Kingdom was released in October 2000. This exhaustive review (a massive 4000 pages in 16 volumes that cost £29 million and took two and a half years to complete) is accessible on the internet (at http://www.bseinquiry.gov.uk). The review provides significant insights into the BSE story and highlights important lessons for the management of zoonotic diseases generally. Australian agricultural and health officials are currently reviewing the Phillips Report to assess Australian practices against lessons to be learned from the United Kingdom's experience.

RECENT EUROPEAN RESPONSE TO BSE

Because of the increased number of cases of BSE in European countries, the European Commission recently introduced further monitoring and surveillance. These include the mandatory testing of all cattle over 30 months old either destined for human consumption (from July 2001) or cattle (such as fallen stock and emergency or casualty-slaughtered animals) considered to be 'at-risk' (from January 2001). Other measures previously introduced include the suspension of the feeding of certain processed animal proteins, notably MBM, to all farm livestock intended for human consumption, and the inclusion of bovine intestines in the list of specified risk materials that must be removed and destroyed. Similar restrictions have been in place in the United Kingdom for several years.

Australia can expect a flow-on effect from these events. To maintain markets in Europe, Australia may be required to adopt certain measures set by the European Community. To this end, the Australian Animal Health Laboratory (AAHL) is in the process of upgrading its BSE testing capabilities to strengthen Australia's surveillance capacity.

EVALUATION OF RAPID BSE TESTS

A Veterinary Committee working group, together with AAHL, considered a targeted active testing program that could be incorporated into NTSESP using new generation, immunological, rapid post mortem tests that have been developed in Europe to detect the BSE agent. The working group examined the technical issues involved in establishing a testing program using one of the three tests endorsed by the European Commission's Scientific Steering Committee. The group recommended a three-phase trial to validate the Prionics-Check test (®Roche Diagnostics and Prionics AG) for BSE. The tests will

be conducted at AAHL and the procedures recommended will ensure that Australia implements the best methods of surveillance for this disease.

AUSTRALIA IS FREE OF BSE

Australia has in place a range of quarantine and other measures to prevent the introduction and establishment of BSE, and these measures conform with or are stricter than OIE and WHO recommendations. Australia continues to be recognised by trading partners as free of BSE and other TSEs of animals. Australia is one of only a small number of countries in the world judged by the European Commission to meet 'Category 1' status for BSE freedom. This recognition results from the soundly based preventive measures adopted here and the cooperative approach by governments and industry in Australia in implementing them. Australia continues to monitor closely developments in Europe and to ensure that preventive strategies against BSE and related diseases reflect current scientific knowledge and are appropriate to Australian animal and public health circumstances.

Contributed by: Ed Klim,
Product Integrity and Animal and Plant Health, AFFA

Newcastle disease update

There have been no further outbreaks of virulent Newcastle disease (ND) since February 2000, when the last case of virulent ND and isolation of virulent ND virus occurred in New South Wales (NSW).

In 2000, the Agricultural and Resource Management Council of Australia and New Zealand (ARMCANZ) endorsed a national approach to managing Newcastle disease due to virulent virus of Australian origin. This included a national survey for ND viruses (see *AHSQ* Vol. 5, No. 1) and a national management plan overseen by a government–industry National ND Management Committee. This plan involved targeted vaccination in two Designated Risk Areas (DRAs) in NSW, restrictions on movement of products, and implementation of agreed standard operating procedures for clean-up, disinfection and other routine operations. Birds on five multi-age layer farms in the DRAs and from which virulent ND virus was isolated previously (in late 1999 and early 2000) were vaccinated, quarantined but not depopulated, pending results of the national survey.

The national survey was completed in December and showed no evidence of the presence of virulent ND virus or of related precursor viruses. After consideration of the results of the national survey, the National ND Management Committee endorsed a quality assurance approach to achieving OIE status as an ND-free country. Depopulation and clean-up of the five premises mentioned above has commenced and is expected to be completed by the end of March 2001, allowing a case to be made for OIE recognition as ND-free in September 2001. Further details are available on the internet (at http://www.affa.gov.au/docs/animalplanthealth/exotic/eadp-events.html).

Contact: Mike Nunn,
Office of the Chief Veterinary Officer, AFFA

National Arbovirus Monitoring Program

The National Arbovirus Monitoring Program (NAMP) is a national program jointly funded by industry and government to monitor the distribution of economically important insect-borne viruses (such as bluetongue, Akabane and bovine ephemeral fever — BEF) and their vectors.

This report covers the second half of 2000, during which a low level of arboviral activity in northern Australia is usual. Elsewhere, seroconversion occurred at only one site in NSW.

BLUETONGUE

In the far north of Western Australia, cattle at two sentinel sites seroconverted to bluetongue in the months of September, November and December. BLU 1 was the main serotype circulating. In the Northern Territory, bluetongue viral activity was more widespread. Sentinel cattle in three herds seroconverted during the third quarter of the year, and at these three sites, and one other, during the last quarter. In Queensland the usual seasonal patterns were followed with low grade activity on the coast in winter and in the north during the last quarter.

AKABANE

In WA, Akabane virus infected one sentinel herd in September, the same herd and another herd in November, and a third herd in December. In NT, activity was limited to one sentinel herd in July and another herd in September, but was more widespread during the last quarter with seroconversions in all three months in a total of five herds.

In Queensland, a single herd in the far north was infected in the third quarter, with activity more

widespread in October, November and December with five herds stretching along 1500 km of the coast infected. Sentinel animals seroconverted to Akabane virus at one mid-north NSW coastal site in December.

BOVINE EPHEMERAL FEVER

In the far north of WA, the level of BEF activity in the third quarter was too low to be detected by the sentinel cattle herd system. Activity then increased and three herds seroconverted in November or December. Conversely, in NT there was fairly widespread activity in the third quarter, contracting to the Top End in the last quarter. Although there was widespread activity of BEF in Queensland from mid-1999 to mid-2000, there was limited activity in the last half of 2000, with transmissions restricted to northern coastal areas.

INSECT TRAPPING

Low numbers of *Culicoides* were collected in vector traps in WA because of cool and windy conditions during the entire winter. In the last quarter, numbers of midges collected increased, but remained low at some locations where populations are normally high. Noteworthy though was the identification of *C. brevitarsis* at Roebuck Plains, for the first time since the start of the NAQS monitoring program. In NT, *C. actoni*, *C. brevitarsis*, *C. fulvus* and *C. wadai* were collected in numbers and at sites usual for the third and fourth quarters of the year.

There was evidence of *C. brevitarsis* overwintering along the Queensland coast, and a little inland, as usually occurs. *C. wadai* was trapped at Biloela in July and *C. actoni* was identified from a Townsville trap. In the last quarter. *C. brevitarsis* was the only vector species collected, being trapped along the coast and inland to Darling Downs as early as October.

Contributed by: Geoff Gard,
Commonwealth NAMP Coordinator

Animal Health in Australia Conference

Representatives of animal production industries, governments and Animal Health Australia met in Canberra in November at the inaugural Animal Health in Australia Conference. The conference was jointly sponsored by Animal Health Australia, the Commonwealth Department of Agriculture, Fisheries and Forestry — Australia (AFFA), and the National Farmers' Federation.

Speakers at the conference included Australian and international experts in animal health. The theme was 'Securing Our Future' and participants explored how best to maintain Australia's animal health status. The Minister for Agriculture, Fisheries and Forestry, the Hon. Warren Truss MP, opened the conference. In his opening address, Mr Truss spoke of Australia's enviable animal health reputation and how important this is in gaining and maintaining international markets for livestock and livestock products. He raised two issues that were to recur as important themes throughout the conference — the importance of government–industry partnerships and the integral relationship between animal health and trade.

The role of veterinarians in Australia's animal health system was a recurring theme. Veterinary education, ways of attracting practitioners to rural areas, and the need for a new generation of government veterinarians were discussed at length. Disease surveillance and emergency management — including preparedness and response capability — were identified as essential for maintaining Australia's favourable animal health status. Participants were left in no doubt about the importance of emergency management when speakers outlined examples of the recent emergence of zoonotic diseases such as Nipah virus in Malaysia and Hendra virus in Australia.

A recurring theme of the conference was the need for all levels of government to work cooperatively with livestock industries and private providers of animal health services. The conference emphasised that a unified approach is required to meet the demands of increasingly competitive international markets. It successfully brought together representatives of all parts of Australia's animal health services. A summary of presentations and discussion is available on the Animal Health Australia website (at http://www.aahc.com.au/conference).

Contact: Peter Thornber,
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.

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

Veterinary Committee meeting

Veterinary Committee (VetComm) consists of Chief Veterinary Officers of the Commonwealth, the States, the Northern Territory and New Zealand together with a CSIRO representative. VetComm met for two and a half days in Tasmania in October and addressed a comprehensive range of national animal health issues.

FOOT-AND-MOUTH DISEASE PREPAREDNESS

Because the recent spread of foot-and-mouth disease (FMD) in Asia has increased the threat to Australia's livestock industries, VetComm agreed on the need for an urgent review of the existing strategy for FMD. Animal Health Australia will be responsible for coordinating the development of a comprehensive integrated strategy, which will include current activities occurring at the state, territory and national level.

INDUSTRY–GOVERNMENT COST- SHARING FOR EMERGENCY ANIMAL DISEASES

Over the past two years, Animal Health Australia has been coordinating the development of new national funding arrangements for emergency animal disease responses. The proposed arrangements will provide for the sharing of the eligible costs of a disease response by governments and affected industries, and are expected to replace the present Commonwealth–States Cost-Sharing Agreement (CSA). Further information is available at http://www.aahc.com.au.

A critical issue that VetComm considered was the need to agree on a consistent approach by State and Territory jurisdictions for defining 'normal' animal health services for inclusion in the new CSA. VetComm agreed that the definition required the development of animal health performance indicators and standards. Until such standards are developed, current arrangements will be maintained. As part of the development of the new CSA, each jurisdiction is to prepare a statement of principles, including commitments, for emergency animal disease responses.

CROSS-BORDER JURISDICTIONAL ISSUES

Several animal health and residue issues have occurred in which States (and Territories) sharing borders have a mutual and interdependent interest. There is a growing need for greater harmony in approach between adjacent States on how national programs address these issues. Significant livestock movements occur between some States and the interests of industry and government are not served by *ad hoc* or inconsistent approaches to shared problems.

The benefits of developing principles and agreements addressing cross-border issues apply equally to endemic and exotic/emergency diseases. In particular, the effectiveness of an emergency response will be undeniably hampered by the absence of pre-agreed arrangements to enable uniform, coordinated services to be delivered in adjacent States. A working group was established to develop principles addressing cross-border jurisdictional issues for Standing Committee on Agriculture and Resource Management (SCARM) endorsement.

CATTLE TICK DEFINITIONS AND RULES

Cattle tick, which are present in WA, Qld, NSW, and NT, are a significant cause of lost production in the beef and dairy industries. Control in Australia is through the use of declared areas (zones) with regulations to control the spread of cattle tick between areas. Tick eradication is actively pursued where outbreaks occur in free areas and in some States eradication programs are in place in infected areas.

A working group is to develop the first edition of the National Standard Definitions and Rules (SDRs) for cattle tick to remove the inconsistencies between each jurisdiction's regulations. States and NT will gradually adopt these SDRs as opportunities arise to amend regulations, given the impracticality of amending the regulations in the short term. SDRs have thus been drafted in a somewhat generic nature, outlining the principles and standards considered adequate to control cattle tick.

A further consideration in the development of SDRs has been the increasing awareness of the overuse of chemicals to control cattle tick and of the associated environmental, workplace health and safety, and chemical residue concerns. The general principle that has been adopted is that at all times the use of chemical control methods will be minimised where this is consistent with the ability to control cattle tick. Since the meeting, SCARM has endorsed the cattle tick SDRs. Information concerning the cattle tick SDRs can be obtained from the State/NT CVOs.

NEXT MEETING

The next face-to-face meeting is scheduled for 1–3 May 2001 in Victoria. Information about meetings can be found in the internet newsletter *VetCommunique*, which is available at http://www.affa.gov.au/docs/animalplanthealth/vetcom/index.html#vet

Contributed by: Jill Mortier, Secretary VetComm

Johne's disease update

OVINE JOHNE'S DISEASE STANDARD DEFINITIONS AND RULES

The National Ovine Johne's Disease (OJD) Standard Definitions and Rules (SDRs), which were endorsed by SCARM in July 1998, have been updated by VetComm's OJD Technical Advisory Group. VetComm endorsed the second edition of the OJD SDRs and SCARM also agreed that the rules apply as the minimum standard for control of the disease. Copies of the second edition can be obtained from State/Territory JD contacts. Two major changes in the second edition concern vaccination in control zones and terminology for the abbreviation 'NA'.

Although the use of vaccine in a Control Zone is not consistent with the objective of progressing to Protected status, there may be circumstances where the use of vaccine in heavily affected flocks in Control Zones (e.g. in areas adjoining Residual Zones) may be justified. The OJD Technical Advisory Group will develop strict guidelines for such vaccine use for VetComm's consideration.

The term Non-Assessed (NA) has been changed to Nil Assurance (NA). This better reflects the situation where suspect flocks are investigated, with negative results, and an unrestricted status restored.

JD NEWS

In December, Animal Health Australia released the first issue of *JD News*, the official newsletter of the National JD Control Program. *JD N*ews can be obtained from the State JD contacts or viewed at Animal Health Australia's website (www.aahc.com.au) .

BOVINE JOHNE'S DISEASE SURVEY IN BEEF CATTLE

A survey (*AHSQ* Vol. 5, No. 3) is being undertaken to assess the prevalence of bovine JD (BJD) in south-eastern Australian beef herds in the BJD Control and Residual Zones that have little contact with dairy cattle, with a view to easing restrictions on the movement on such herds into higher status zones.

An awareness phase, including regional meetings and media publicity, was undertaken in October, after which animal health staff started contacting the producers who had been randomly selected for Stage 1 of the Survey. Selected herds are considered 'eligible' if they have 50 or more breeders and do not comprise any adult dairy type or first-cross dairy cattle. In the absence of information about individual cattle enterprises, it had been anticipated that about 70% of selected producers would be eligible for the survey. As it transpired, fewer herds were eligible. In Victoria for instance, about three-quarters of selected herds were considered ineligible and half of these included dairy-type cattle. Low eligibility rates meant that more people had to be contacted to recruit the 160 herds that were to be tested in Stage 1, and the enrolment period was extended from December to mid-January.

Contact: David Kennedy,
Animal Health Australia's JD Coordinator

Antibiotic use in food-producing animals

RESPONSE TO THE REPORT OF THE JOINT EXPERT TECHNICAL ADVISORY COMMITTEE ON ANTIBIOTIC RESISTANCE

Commonwealth Government authorities responsible for animal and human health have released a response plan to the report by the Joint Expert Technical Advisory Committee on Antibiotic Resistance (JETACAR), which was established in 1998 to undertake a major study of antibiotic resistance in Australia (*AHSQ*, Vol. 4, No. 4). An implementation team has been formed to oversee the government response plan. The original report and the response plan are available on the internet (at http://www.health.gov.au/hfs/pubhlth/publicat/document/metadata/jetacar.htm).

The government response plan includes extensive consultation with relevant industry organisations, and the Australian Veterinary Association. Implementation of the recommendations will involve State and Territory departments of health and agriculture, as well as the national authorities responsible for medical antibiotic registration (the Therapeutic Goods Administration) and veterinary antibiotic registration (the National Registration Authority for Agricultural and Veterinary Chemicals).

EXPERT GROUP ON ANTIBIOTIC USE

One of the first tasks of the implementation team is to establish a permanent and independent expert group, the Expert Advisory Group on Antibiotics (EAGA). Members will be announced early in 2001. EAGA will play a key role in the national management of antibiotic resistance, including the establishment of monitoring and surveillance programs for antibiotic resistance in medical, veterinary, zoonotic and

indicator bacteria. The group will collate and analyse information, report on trends in antibiotic resistance, and make recommendations to the various regulatory bodies.

INTERNATIONAL DEVELOPMENTS

Australian veterinary authorities are working closely with the Office International des Épizooties (OIE), the world organisation for animal health. OIE has appointed an expert group, including an Australian representative, to develop international protocols for antibiotic use in animals. This OIE report will be the first international technical document devoted solely to antibiotic use in food-producing animals and will be presented to the annual meeting of representatives from OIE's 155 member countries in May 2001. A draft of this document is available on the internet (at http://www.anmv.afssa.fr/oiecc/abr/).

Continued consultation will be required between all levels of government, veterinary authorities, veterinarians, livestock producers, and agricultural and veterinary chemical manufacturing industries to develop antibiotic resistance management programs that meet national and international requirements.

Contact: Terry Nicholls,
Office of the Chief Veterinary Officer, AFFA

Aquatic animal health

WHITE SPOT SYNDROME IN DARWIN

In November, the Northern Territory Department of Primary Industry and Fisheries reported that imported green prawns had inadvertently been used as feed for crabs at the Department's Darwin Aquaculture Centre and as feed for tiger prawns at the Aquaculture School at the Northern Territory University. Both facilities were immediately destocked and disinfected as a precautionary measure against disease transmission. Subsequent testing by polymerase chain reaction (PCR) confirmed the presence of white spot syndrome virus (WSSV) DNA in both the mud crabs and tiger prawns.

DNA signals similar to WSSV were detected by PCR assay in 5 of 12 shore crabs collected from Darwin Harbour in November. Further sampling and testing of 42 crabs from the same location in December 2000 failed to return any WSSV-positive DNA signals. Further testing on crustacean populations is being undertaken. There is no evidence of clinical disease in any crustaceans.

Each State and Territory is participating in a survey coordinated by the Consultative Committee on Emergency Animal Disease (CCEAD) to determine the prevalence of viral diseases in wild crustacean populations in Australia. Crabs and prawns will be collected from more than 70 sites around Australia and tested for both white spot and yellow head viruses. A survey of prawn farms confirmed that WSSV was not present in farmed prawns in Australia.

AQUAVETPLAN ENTERPRISE MANUAL

In December, the AQUAVETPLAN Enterprise Manual was launched as the first in a series of operational manuals and instruments. AQUAVETPLAN manuals outline the methods and protocols that will help ensure Australia is prepared for any outbreak of an emergency disease in aquatic animals. AQUAVETPLAN manuals are being produced as part of AQUAPLAN, Australia's National Strategic Plan for Aquatic Animal Health (1998–2003).

The Enterprise Manual — written with support with funding provided by the Fisheries Research and Development Corporation — is designed to be used by governments and industry, and provides decision-makers with quick and easy access to the information needed to implement control strategies at short notice. The manual also provides industry with guidance on the various factors that need to be taken into account when making decisions during an emergency. It also includes information on various industry practices and structures, and outlines approaches that should be considered in the face of an aquatic animal disease emergency.

STANDARD DIAGNOSTIC TECHNIQUES

Effective diagnosis of infection and disease depends on reliable and reproducible laboratory methods referred to as standard diagnostic techniques (SDTs). AQUAPLAN recognises that the range of SDTs available for pathogens of farmed or wild captured fish, molluscs and crustaceans is limited. AQUAPLAN has a specific project to expand the range of SDTs available for the aquaculture and fisheries sectors. Using various funding sources, SDTs for five pathogens in the aquaculture and fisheries sector have been developed and have been published on the AFFA website (at http://www.affa.gov.au/animal_plant_health) under 'AQUAPLAN programs and projects'.

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

Tuberculosis Freedom Assurance Program review

The five-year Tuberculosis Freedom Assurance Program (TFAP) commenced on 1 January 1998 (*AHSQ*, Vol. 3, No. 1) following the declaration of freedom from bovine tuberculosis (TB). TFAP replaced the Brucellosis and Tuberculosis Eradication Campaign (BTEC) to manage surveillance and to handle the few new cases of TB that might arise.

TFAP is administered by Animal Health Australia under a Deed of Agreement between it, cattle industries in Australia, the Commonwealth of Australia, and the Australian States and Territories. The Deed required that a mid-term review be undertaken.

The first part of Operational Management Review (OMR) was completed in October and reviewed TFAP and suggested policies for the remainder of the program. The review team, chaired by Graham Alexander, comprised Ross Brunckhorst and John Stewart (Cattle Council of Australia), Jim Tolson and Brad McCormick (representing State TFAP Managers), Bill Scanlan (Commonwealth), Simon Winter (Animal Health Australia), and Ross Newman (TFAP Coordinator).

The review team considered that the procedures being undertaken within the TFAP conformed to the steps necessary to ensure that the status of Australia as a Tuberculosis Free Area was maintained. It was felt that funding was adequate, and expenditure was within budget, partly because of the reduced incidence of TB. However, the sporadic nature of the disease means that costs can vary considerably between years, making estimation of costs difficult.

The National Granuloma Submission Program (NGSP) began in 1992 under BTEC and is an integral part of TFAP. By June 2000, 72 cases of TB had been detected in the 20 246 granulomas submitted from abattoirs, with only five cases of TB being diagnosed since the commencement of TFAP. However, efforts to maintain the submission rate of granulomas have proved difficult in some States/Territories. A separate review of NGSP occurred in June 2000.

OMR considered suggestions made by this review. Although these included the need to develop an extension program to promote awareness of the importance of submitting granulomas for diagnostic purposes, it seemed reasonable to review the sampling rates for granulomas given the low level of incidence, particularly in some jurisdictions.

OMR also considered the NGSP review's recommendations about the management of NGSP. The OMR team felt it was desirable that the present management of NGSP by AQIS and the State/ Territory departments should be retained until the end of the program, on 31 December 2002. However, a small sub-committee of the TFAP Coordination Committee is examining the management of NGSP, particularly the role of the NGSP Coordinator.

The Board of Animal Health Australia generally supported the OMR's recommendations, except those requiring changes to the TFAP Deed of Agreement. Most of the recommendations will be addressed further in the second part of the review, which will be conducted by a smaller group, also chaired by Graham Alexander. This report, due at the end of March 2001, will consider options to ensure that Australia's free status will not be jeopardised after 2002.

Contact: Simon Winter, Animal Health Australia

Northern Australia Quarantine Strategy

The Northern Australia Quarantine Strategy (NAQS) provides early warning of disease threats to both animal and plant industries. The following reports some of NAQS's activities in the second half of 2000.

QUEENSLAND

The animal survey program was disrupted by both the extended 1999–2000 wet season and by the early onset of the 2000–01 wet season. This restricted access to much of Cape York Peninsula for most of 2000, leaving a short period of September to November to conduct field-based surveys. Significant negative results were obtained from a collaborative helicopter-based survey of a large part of Cape York, including the high-risk areas of Lakefield National Park and the area around Princess Charlotte Bay. No exotic diseases were detected in any of more than 2000 feral pigs shot and examined. This survey was innovative in that it was the result of close collaboration between NAQS, the National Heritage Trust-funded Cape York Weeds and Feral Animals Project, and the Queensland National Parks and Wildlife Service — involving all three levels of government (Commonwealth, State and Local Cook Shire).

A survey of the high density feral pig areas of the west coast of Cape York Peninsula was commenced in November 2000 but was curtailed because of

unseasonably early rain. A successful helicopter-based feral animal survey of islands in the Torres Strait was completed in November–December, with no evidence of any exotic animal diseases found in feral deer and pigs examined.

The sentinel pig program for the 2000–01 wet season started at the beginning of December 2000, with sentinel pigs being placed at four sites. Blood was sampled from these flavivirus-naïve pigs weekly from the two more northern sites (Badu Island and Injinoo) and fortnightly from the two more southerly sites (Old Mapoon and Normanton). There was no serological evidence of any incursion of Japanese encephalitis (JE) as at 31 December.

The screw-worm fly (SWF) trapping program continued. SWF identification training for staff from the Torres Strait and NPA was done in November, to help prepare these staff for the forthcoming monsoon season, where strong north-westerly winds could blow adult SWF from PNG into the Torres Strait.

NORTHERN TERRITORY

Further training of rangers was undertaken at the Maningrida Park as part of a process to develop surveillance systems for exotic diseases on aboriginal land that directly involve the local aboriginal people in the surveillance and survey activity. This 'hands-on' exercise taught post mortem techniques, sample collection for animal health surveillance, and plant collection techniques for weed detection. Feral pigs surrounding the ranger station were shot and transported to the ranger station so that 15 aboriginal rangers could develop skills in post mortem techniques. A parasite survey was undertaken on these pigs. The training discussed plant quarantine issues and techniques for plant collection so that unknown plants could be sent to Darwin for identification.

WESTERN AUSTRALIA

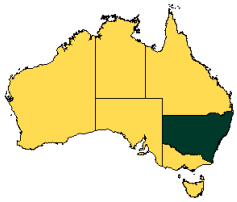
Targeted surveys found no evidence of any exotic diseases in feral pigs examined at four sites. Ae proposed survey of migratory wading bird using cannon netting planned for November near Roebuck Bay was postponed to fit in with the Royal Ornithological Union of Australia, which provides qualified personnel for this activity.

The animal monitoring program continued as planned. However, early rapid seroconversion of sentinel pigs and cattle resulting from infection with endemic flaviviruses (such as Murray Valley encephalitis) has severely reduced the effectiveness of these animals as early indicators of any potential JE incursion. There is an urgent need for a better serological test for JE that can differentiate it from endemic flaviviruses to enhance NAQS' ability to monitor for this disease in northern Australia.

Contact: David Banks, Biosecurity Australia

State and Territory Reports

New South Wales



Contributed by:
Evan Sergeant
NSW Agriculture

ANTHRAX

One anthrax incident was confirmed during the quarter on a property at Bourke, in the western part of the State. This property had a history of anthrax some years ago, but had not vaccinated stock for several years. A total of about 60 sheep died out of 2800 on the property. Losses ceased following vaccination of the remaining stock.

EXOTIC DISEASE EXCLUSIONS

Foot-and-mouth disease was excluded as the cause of ulcerative lesions on the muzzle and tongue of an 18-month-old heifer in the north-west of the State. Samples submitted to AAHL were negative. Pestivirus was suspected as the cause of these lesions, but was not confirmed.

Newcastle disease and avian influenza were excluded as the cause of death of domestic fowl in several incidents during the quarter.

DNA consistent with porcine circovirus type 2 was identified in samples collected during an investigation of ill-thrift in pigs during the quarter. The disease syndrome investigated differs clinically and pathologically from post-weaning multi-systemic syndrome reported in association with this virus overseas, and investigations are continuing to determine the significance of this finding.

ENZOOTIC BOVINE LEUCOSIS

By the end of 2000, less than 1% (13 out of 1532 herds) of the State's dairies were still infected with enzootic bovine leucosis (EBL). A further 10 herds were provisionally clear following eradication of previous infection, and one herd was under investigation following an inconclusive bulk milk test. Three new herds have not yet been assessed. The State dairy industry is expected to achieve provisional freedom by the end of 2001.

OVINE JOHNE'S DISEASE

In the quarter, 899 630 sheep were examined by abattoir surveillance for ovine Johne's disease (OJD). Of the 3003 lines examined, samples from 350 lines were sent to the laboratory for further examination and 191 of these lines were histologically positive for OJD. About 28% of lines from the Residual Zone were positive, compared with only 3.5% of lines from the Control Zone.

During the quarter, 33 new infected flocks were reported, giving a total of 598 infected flocks identified in NSW since 1980. Of the 505 (1.6%) currently known infected flocks, 309 (61%) are in the Residual Zone. About 9% of flocks in the Residual Zone are known to be infected, compared with less than 0.6% in the Control Zone.

At the end of December, about 1% (337) of the State's sheep flocks had a Market Assurance Program (MAP) status of MN1 or greater, and of these 72 have successfully progressed to MN2 status.

BOVINE JOHNE'S DISEASE

Generally, there has been a steady increase in the number of herds enrolling in MAP since the scheme started in mid-1996. There has been a drop-off in the past three months, probably as a result of dairy deregulation, zoning and the proposed beef survey. Once some of these issues have settled down it is expected that MAP uptake will return to normal.

More than 1100 herds have now enrolled in MAP, although about 200 of these have subsequently withdrawn (many because they sold out). Nonetheless, 246 herds have reached MN3 status, with a further 313 having MN2 status at 31 December.

BOVINE ABORTION STORM

In October, about 60 cows in a group of 150 aborted over 2–3 weeks. Cows were in the last months of pregnancy and were being grazed along a travelling stock route in the north-west of the State. Each of five cows tested serologically had titres of 3200 to *Leptospira pomona*, which is consistent with recent infection. Titres to *L. hardjo* were negative (200, 800, 800 and 1600). The animals were serologically negative for *Brucella abortus*. One near full-term aborted foetus were submitted for laboratory examination. Histologically, this calf had a mild non-suppurative interstitial nephritis (consistent with but not specific for leptospirosis), but yielded no significant isolates on bacterial culture, and showed no elevation of IgG in pericardial fluid.

The source of the infection was probably feral pigs, which were numerous in the area. The cattle were unvaccinated and were yarded each night, probably facilitating transmission of infection between cows. The laboratory results illustrate the value of maternal serology for diagnosis of *L. pomona* abortions.

HAEMOPHILUS SOMNUS DEATHS

Nine deaths occurred over a 3-4 week period in a group of 300 steers. The animals were heavily stocked on a 100-acre property and were strip-grazed. They were inspected every 3-4 days and most affected animals were found dead. One sick steer with a temperature of more than 40C responded to antibiotic treatment. One recently dead steer was autopsied. Myocardial haemorrhage was the only significant lesion seen grossly. Histologically, there was severe myocardial infarction and suppurative myocarditis with the presence of bacterial colonies. Bacterial emboli and associated focal inflammatory lesions were seen in skeletal muscle and kidney. *Haemophilus somnus* was cultured from heart and liver, confirming a diagnosis of *H. somnus* septicaemia.

Northern Territory

Contributed by:
Helen Parkes
NT DPIF

CATTLE

A syndrome of chronic weight loss and neurological signs including ataxia, in heavily pregnant and recently calved cows on a western NT cattle property was investigated. There were no specific findings apart from fatty livers and ketosis, and an acute endometritis in one animal. Bovine spongiform encephalopathy was excluded. No evidence of black soil blindness or lead poisoning was found. Poor quality bore water was suspected to be causing chronic salt toxicity in these cattle.

Anaplasmosis was suspected as a factor in the deaths of three heavily pregnant cows from a group transported to the Douglas Daly area from northern WA about one month previously.

Salmonella Muenchen was isolated from the intestines of a two-week-old calf, as part of an investigation into early calf mortalities and lower than expected weaning rates on an extensive property in the Tennant Creek region.

PIGS

Increased mortalities in three-week-old pigs were associated with diarrhoea, dyspnoea and swollen joints. Post mortem examinations showed severe fibrinous pleuritis and pericarditis, with purulent synovitis. Glasser's disease (polyserositis associated with *Haemophilus parasuis* infection) was diagnosed. *Streptococcus suis* was isolated from the lungs of one pig, which had acute suppurative bronchopneumonia.

Sudden deaths in weaner pigs from another property were associated with a range of signs including suppurative meningitis, pneumonia and lymphadenitis, and valvular endocarditis with renal infarction. Several bacteria species were isolated, but a *Staphylococcus* species appeared to be the most consistent finding.

HORSES

Hendra virus was excluded as a cause of acute pneumonia and sudden death in a yearling filly from the Katherine region.

Strangles continues to be reported from several locations, including an outbreak in the Alice Springs region, confirmed by the culture of *Streptococcus equi* subspecies *equi* from mucopurulent nasal discharge.

OTHER SPECIES

Botulism, involving domestic fowl and ducks, was diagnosed on two properties.

A *Salmonella* species was isolated from the lung and faeces of a female goat with a short history of bloody diarrhoea followed by death.

A syndrome of peritonitis and septicaemia in juvenile farmed crocodiles was associated with *Providencia rettgeri* infection. This is the bacterium most commonly isolated from septicaemic crocodiles submitted to Berrimah Veterinary Laboratories.

Queensland

Contributed by:
Janet Berry
QDPI

POULTRY INVESTIGATIONS

Aspergillosis caused mortalities of 2.3% in a group of 4000 three-day-old broiler chicks in the south-east of the State. Necropsies revealed uneven growth rates, uni- or bilateral pneumonia/air sacculitis, and evidence of yolk sac infection in many birds. Affected lungs were purple and consolidated, with miliary white foci up to 1mm in diameter. Similar white foci were present in affected air sacs, which were thickened and cloudy. Histologically, there was severe, subacute, multifocal to coalescing necrotising mycotic pneumonia, as well as mycotic infection of yolk sacs. *Aspergillus fumigatus* was isolated from lung swabs of two chicks. No significant bacteria or viruses were isolated.

Infectious laryngotracheitis (ILT) virus infection and infectious coryza were diagnosed in a small non-commercial poultry flock in the south-east. Loss of weight and dyspnoea were reported in domestic fowl, with ducks and turkeys on the same property apparently healthy. Birds submitted for autopsy had tracheal and laryngeal lesions consistent with ILT (syncytia with inclusion bodies). *Haemophilus paragallinarum*-like bacteria were isolated from upper respiratory tracts. Antibody titres to *Mycoplasma gallisepticum* and *M. synoviae* were also detected. After vaccination for ILT, no further cases occurred.

Faulty nutrition was responsible for 10% losses among 5000 3-week-old layer pullets on an egg farm in the Mount Morgan Shire in central Queensland. All birds were emaciated, indicating chronic malnutrition, and were convulsing before death. At autopsy, the only obvious finding was proventriculitis with no lesions consistent with Newcastle disease or any other exotic disease agent. The problem resolved once a new batch of feed was prepared. There were no obvious problems with the grain, which was being fed to the laying birds on the property without obvious production loss. It was concluded that there had been a problem with the batch of feed fed to the birds during their first three weeks of life.

EXCLUSION OF HENDRA VIRUS

The sudden death of a racehorse in a stable at Hendra in Brisbane was investigated as a suspect case of Hendra virus. The horse developed a swelling of the left side of the face in the morning. By the afternoon this had progressed to a bilateral swelling, with a serous yellow nasal discharge and a body temperature of 39ºC. The horse was found dead at 3.30 am the following morning with a frothy nasal discharge and was taken to Yeerongpilly Veterinary Laboratory for post mortem examination. Acute interstitial pneumonia of moderate severity was found. The subcutis of the face showed extensive fibrinous oedema and multifocal haemorrhages. Tissues were sent to Queensland Health Department and to the Australian Animal Health Laboratory for exclusion of Hendra virus. Polymerase chain reaction (PCR) and indirect immunoperoxidase tests were negative. Virus isolation was also negative. Purpura haemorrhagica was the presumptive diagnosis.

ARSENIC POISONING IN CATTLE

At least 35 mixed-sex Brahman weaners died from arsenic poisoning on a property near Charleville. The cattle started dying after rainfall and, suspecting a toxic cause, the owner moved the mob to a fresh paddock. There were continuing deaths and a post mortem examination revealed haemorrhages in the lining of the abomasum. The arsenic levels in fresh tissue samples of liver and kidney were diagnostic of arsenic poisoning as the cause of death. The weaners had had access to an old plunge dip and a broken-down chemical shed. The floor of the shed was covered with a white powder, almost certainly old sheep dip. It was sampled and showed very high arsenic levels. Arsenic is not a problem chemical from a residue perspective. The owner intends burying the shed and fencing off the contaminated area to prevent further deaths. Staff on the property have been recommended to attend a DPI chemical awareness course.

MORTALITIES IN MUTTON BIRDS

In November–December, Yeerongpilly Veterinary Laboratory (YVL) investigated a reported large increase in mortalities of short-tailed shearwaters (seabirds commonly known as muttonbirds) migrating south along the Queensland coast. Mortalities on this occasion were reported far in excess of the usual background rate (attributed to dehydration, exhaustion etc.) associated with the long migration from north-east Asia to southern Australia. YVL received tissue and gut content samples from Queensland Parks and Wildlife Service, and from Currumbin Sanctuary. Viral isolation was unproductive. Toxicological investigations identified traces of organochlorines in all (12) gut content samples. The significance of these findings is uncertain and examination of residue levels in liver is proposed. Investigations of the mortalities by AAHL excluded exotic avian diseases.

BOVINE TUBERCULOSIS

In December, tuberculosis (TB) was diagnosed in a sample collected under the National Granuloma Submission Program. The animal was one of three purchased from a property at Taroom. However, further investigation found that the animal had been purchased in July 2000 from another Queensland property, at Bollon. This property had been sold during 2000 and all cattle dispersed in a number of sales. Tracings from these sales have identified a large number of consignments that were distributed for slaughter, feedlot or breeding purposes. Programs for containment and slaughter of suspect companion animals consistent with the Standard Definitions and Rules of TFAP have been put in place. Given that only one animal has been detected positive and that more than half of the 1350 sold during 2000 have already been slaughtered, the level of TB appears to be low. At this stage of the investigation the origin of the infection is unknown, but the Bollon property had no previous history of TB.

BOVINE JOHNE'S DISEASE

For three years a property in Mareeba Shire has had mature Brahman cows and male castrates exhibiting marked chronic weight loss. Affected animals were typically depressed, lost weight, had poor hair growth and, in comparison to companions, appeared stiff and upright when made to move. Affected animals were tested for a range of conditions, including Johne's disease (JD). In September 1999, one of these cases gave a positive result on ELISA for JD. Follow-up faecal culture testing of the herd was conducted and all cultures have proved negative. Previous work with cattle in north Queensland has demonstrated up to 8% reactivity to the JD ELISA owing to factors such as cross-reactions from environmental mycobacteria. The ill-thrift in these animals is possibly due to nutritional stress combined with the effects of plant toxins.

South Australia

Contributed by:
Kim Critchley
PISA

VETERINARY SURVEILLANCE PROGRAM

Through the provision of laboratory fee support, the Veterinary Surveillance Program encourages veterinary practitioners to submit material from unusual cases or from cases affecting a continuing series of animals.

Samples from a small number of non-responsive 'downer' dairy cows have indicated a generalised hepatopathy of undetermined origin. Ataxic cows in a dairy herd were found to be suffering from lead poisoning. In a severe respiratory problem in which six dairy cows died, *Pasteurella haemolytica* was isolated and there were rising titres for parainfluenza 3 virus. The owner had allowed a neighbour to yard and hold some beef cattle next to the entry race of the dairy about a week before. The most serious cases occurred in cows housed in the paddock next to the yards.

ENCEPHALITIS IN PIGS

Two separate incidents were reported of weaner pigs with nervous signs including paresis. Histology indicated a non-suppurative encephalitis. In the first case, Aujeszky's disease was considered a possibility and samples were forwarded to AAHL. Viral isolation

attempts were negative, as was serology, but the pathologist reported the presence of apparently single-cell organisms in the brain. Differential staining suggested possibly protozoans, while electron microscopy were mycoplasmas. The second case is still being investigated.

STRANGLES

Two isolated cases of strangles, which is not often reported in the State, had quite severe signs with eventual rupture of abscesses through the skin. Another outbreak occurred in horses from WA.

FOOTROT

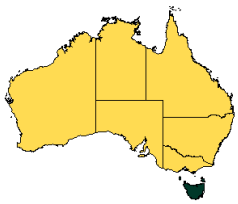
The early onset of summer conditions combined with intermittent bouts of wet weather provided ideal damp, warm conditions caused a sudden increase in footrot in the Naracoorte – Mt Gambier area at the end of the year.

FISH DISEASES

Yellowtail kingfish (*Seriola lalandi*) farmed in sea cages have been experiencing serious mortalities over the late spring–summer period due to infestation with gill-fluke. The fluke has been tentatively identified as the monogenean *Zeuxapta seriolae*. Management strategies are being developed to control the outbreaks.

Tasmania

Contributed by:
John Elliott
DPIWE, Tasmania



MONENSIN TOXICITY

The sudden death of 24 of 50 dairy calves occured in north-west Tasmania, with no obvious lesions on post mortem examination, but acute myocardial necrosis found on histopathological examination. Monensin toxicity was suspected. Levels of monensin in a premix food supplement used were found to be 10 times higher than the level specified on the label.

Three weeks earlier, 75 calves had died at a property in the central–north of the State. Subsequent investigation implicated the same premix in these deaths. Sales were traced by batch number. The premix had been used on two other properties but no deaths had occurred.. The National Registration Authority for Agriculture and Veterinary Chemicals was notified. Deaths have all been attributed to the same batch of premix in Western Australia.

PSITTACOSIS

In October, the Health Department reported that an unusually large number (seven) of cases of psittacosis in humans had been reported since August. One person died and two others were acutely ill. Tracing showed that five of the cases were linked to one pet shop. The sixth case was linked to another large-scale bird breeder. No source was obvious for the remaining case. The petshop and the breeder were asked to withhold all their birds from sale and treat them for 45 days with doxycycline.

RUMENITIS

Rumenitis was reported in apparently healthy steers slaughtered at an export abattoir, with 14 of 38 steers from one property and 20 of 40 from another affected. Ruminal papillae were largely normal but were a dark green–black. Histopathology showed inflammatory changes throughout all layers of the ruminal wall. No obvious pathogens were found. Chemical irritants were the most likely cause.

ONCHOCERCIASIS

Onchocerciasis was found in a granuloma submitted under NGSP. The disease has never been found in Tasmanian-bred cattle. The submitting abattoir has been importing large numbers of cattle from the mainland for immediate slaughter.

NOTIFIABLE DISEASES

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

Disease	Animals	Accessions	
Species	Tested	-ve	+ve
Hydatids			
Bovine	7	4	3
Ovine	3	3	0
Salmonellosis			
Avian	87	5	4
Bovine	101	37	15
Canine	1	1	0
Caprine	1	1	0
Exotic	1	1	0
Miscellaneous	2	2	0
Ovine	15	11	0
Wildlife	17	6	2
Leptospirosis			
Bovine	16	5	1
Human	10	10	0
Ovine	13	0	2
Q Fever			
Ovine	17	6	0
Aeromonas salmonicida			
Fish	11	2	0

SEPTICAEMIA IN PIGLETS

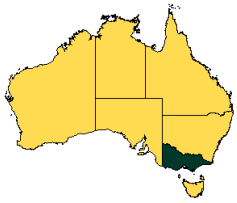
Nine of a group of 100 seven-week-old weaner piglets died over four days. Laboratory examination showed acute suppurative bronchopneumonia and hepatitis due to coliform septicaemia.

SEVERE PARASITISM

Severe gastrointestinal nematode parasitism was diagnosed as the primary cause of diarrhoea and death of more than 60 sheep in a mob of 400. The total worm count in one sheep was 35 200.

Victoria

Contributed by:
Tristan Jubb
DNRE, Victoria



BOVINE RESPIRATORY DISEASE

Infectious bovine rhinotracheitis (IBR) was reported in a dairy herd in south Gippsland with 82 younger cows (2 and 3-year-olds only) showing signs consistent with IBR (fever, muzzle and nasal lesions). Some developed pneumonia, but all dramatically dropped in milk production. One animal that died was found to have fibrinous pneumonia from which *Pastuerella haemolytica* was cultured. The remaining cattle recovered with antibiotic treatment, and milk production increased.

Two dairy cattle died and another 12 became ill on a 100-cow dairy farm in east Gippsland. Severe acute fibrinous pneumonia was found in the two animals and *Pasteurella haemolytica* was cultured. Early detection by measuring rectal temperatures and respiratory rates followed by prompt antibiotic treatment probably prevented the incident from escalating. Surviving cattle that were detected early appeared to respond very well to antibiotic and anti-inflammatory treatment. Of three cows' blood sampled, two were positive for antibodies to parainfluenza 3 virus. It is thought the stress of very hot weather and the consequent crowding in shaded areas under trees may have been predisposing factors.

In northern Victoria, five dairy cows died suddenly over seven days. Only two of the cows showed signs of illness before being found dead. Anthrax was suspected and the animals were tested but found negative. Fibrinous pneumonia was discovered at autopsy. It is suspected that inhalation of dust from feed pellets may have predisposed to the development of a *Pasteurella* pneumonia.

Both IBR and *Pasteurella* pneumonia are relatively rare diagnoses in cattle in Victoria.

EGG DROP SYNDROME

A free-range egg farm in east Gippsland reported a sudden drop in egg production with misshapen and soft eggshells. About 10% of the hens were emaciated and anaemic although mortality rates were not increased. Many birds had diarrhoea. The hens had been vaccinated against a number of diseases including Marek's disease. Post mortem examination of six ill birds provided no new information. Serology for avian influenza, Newcastle disease and haemagglutinating adenovirus was negative. Marek's disease was found in one of the hens. There was evidence of internal parasites and external parasites (feather mites), but not *Argas persicus* (fowl tick). Factors contributing to the reduced production may have included Marek's disease and internal and external parasites.

ANTIBACTERIAL RESIDUES IN CATTLE

Between 1 July and 31 December 2000, the National Antibacterial Residue Minimisation (NARM) program tested more than 27 000 bobby calves and 450 cull and feedlot cattle in export and domestic abattoirs for antibacterial residues. About 99.8% of the bobby calves tested were found to be free of any detectable antibacterial residues. Confirmatory testing detected 15 calves with residues (for sulphonamides, oxytetracycline or dihydrostreptomycin) above the relevant Australian maximum residue limit (MRL). Tissue samples from 331 cull cattle confirmed over 94% of animals as free of detectable antibacterial residues. Confirmatory testing found seven cattle had residues (neomycin) above the relevant MRL.

BRACKEN FERN POISONING

Bracken fern poisoning killed 12 three-month-old calves over a two-month period. They were grazing a pasture of predominantly ryegrass with a small amount of bracken. Post mortem examination of one animal revealed thin watery blood that was slow to clot, multiple haemorrhages throughout the carcase, pale bone marrow, pneumonic areas in the lungs and large ulcers in the pharynx. Bracken fronds were present in the rumen. A bone marrow smear showed marked hypoplasia and an absence of megakaryocytes.

LEPTOSPIRA HARDJO MASTITIS

In one week, several cows in a 200-cow dairy herd developed an atypical mastitis (thickened clotted milk, four quarters affected, but the udder remaining flaccid) and lowered milk production. Bulk milk cell counts increased moderately. In four of six animals tested ten days apart for *Leptospira hardjo*, antibodies went from negative at 1:50 to positive at 1:800.

FLYSTRIKE AND LAMENESS IN SHEEP

The warmest, wettest spring for many years increased disease in sheep. Flystrike conditions were ideal, and many producers needed to crutch their sheep twice and in some cases bring shearing forward. Flock lameness caused by benign footrot, foot abscess and scabby mouth (contagious ecthyma) became a major problem for many producers. Virulent footrot has declined in the past decade and there was some initial concern about the large number of reports of flock lameness. Owners of flocks known to have long-standing benign footrot, or of flocks with sudden lameness appearing, requested inspections by animal health officers because of severe flock lameness. Scabby mouth could almost have been considered a misnomer in some areas of Victoria because up to 90% of the reported cases presented as flock lameness with feet lesions only. Foot abscess, although most severe in lambing ewes, was seen in dry ewes, wethers and rams.

MOSQUITO PROBLEMS IN SHEEP

The weather during the quarter also resulted in a large increase in mosquito numbers that caused unprecedented problems for some sheep producers. Livestock could do little to protect themselves from attack. Many sheep developed severe skin damage, especially on areas not covered by long wool. Young lambs were badly affected, even on wool-covered areas. This resulted in high mortalities in spring-born lambs and a higher than normal mortality in adult ewes.

Adult sheep developed a break in the wool, and lambs became ill-thrifty, listless and lame with multiple swollen joints. The skin of sheep that had been affected for some time became scaled and thickened. *Dermatophilus congolensis* was isolated from skin lesions and *Erysipelothrix rhusiopathiae* was isolated from swollen joints. Common causes of ill-thrift were considered in the differential diagnosis, as were insect-borne diseases. Three out of nine sheep tested on one property were positive for Ross River virus. However, the significance of this finding is not known. The development of bacterial arthritis, coinciding with the mosquito plague and not with castration, mulesing or shearing wounds, suggests that *Erysipelothrix* may have gained entry through wounds initiated by mosquito worry and was responsible for the disease process observed.

MOSQUITO PROBLEMS FOR PIGS

The increase in mosquito numbers also caused problems for pigs. Bites through the sparse hair cover, even on well-grown pigs, often caused allergic reactions in the skin (type 3 hypersensitivity reactions) resulting in masses of large red swellings on the pigs. Although only a cosmetic problem, the loss for badly affected animals normally sold with the 'skin on' was about $60 on a $180 carcase. There are currently no products registered for application to pigs to prevent mosquito bites. Research to identify effective insect repellents and their withholding periods is required.

LEAD POISONING IN CATTLE

In northern Victoria, lead poisoning was confirmed as causing the death of one yearling and illness in two others that chewed a lead battery dumped in a channel. Six out of 150 yearlings died in a separate incident where they chewed paint off an old house while being agisted.

Western Australia

Contributed by:
Richard Norris
Agriculture WA

NOTIFIABLE DISEASES

Thirteen notifiable diseases were reported during the quarter. Bovine genital campylobacteriosis was reported from Manjimup and Geraldton. Echinococcosis (hydatid disease) was confirmed in abattoir specimens on three occasions in sheep. Infectious laryngotracheitis was diagnosed in poultry in the metropolitan area. There were four reports of annual ryegrass toxicity — two in cattle at Tammin, one in goats at Merredin, and one in cattle near Esperance (the first diagnosis in this district). *Brucella ovis* infection was diagnosed in sheep at Dandaragan. Epizootic ulcerative syndrome was diagnosed in dead silver perch from a fish farm at Narrikup. Equine chlamydiosis was diagnosed in specimens from a horse at Denmark.

EXOTIC DISEASE ALERTS

Although a *Brucella abortus* reactor in a consignment of bulls destined for export was almost certainly a false positive reaction, the reacting animal was withdrawn from the shipment and subjected to post mortem examination and tested with negative results. All in-contact animals were tested with negative results.

Liver fluke eggs were detected in the faeces of an imported horse at Wanneroo. Exotic viral diseases (viral haemorrhagic septicaemia), infectious haemopoietic necrosis and infectious pancreatic necrosis) were excluded from wild-caught herring from a local Perth beach after extensive examination at AAHL — the cause remains undetermined. Several

horse diseases (Borna virus, Hendra virus, lyssavirus, rabies, equine encephalomyelitides, and protozoa) were excluded by AAHL in a case of lymphocytic meningoencephalomyelitis, but the cause could not be determined.

SUSPECT ANTHRAX

Over a period of seven days, nine calves died on a Denmark property. The presence of blood at the orifices prompted the private practitioner investigating the deaths to consider anthrax as a possible diagnosis, but samples sent to the State animal health laboratory at Albany excluded this possibility. A subsequent autopsy revealed severe pleurisy and pneumonia, together with haemorrhages throughout the carcase. Histological examination revealed a lack of cellular response. These findings suggested bone marrow damage and the most likely cause was considered to be bracken fern poisoning. Subsequent inquiries confirmed that the calves had been grazing bracken.

MONENSIN TOXICITY IN CALVES

Just 50% of 60 calves, 1–5 weeks old, died after showing rapid onset of laboured breathing. Many were previously coughing and the herd had been treated with tilmicosin at twice the recommended dose rate. Deaths occurred over the following three days due to severe fluid accumulation in the lungs. Histologically, there were extensive areas of damage in the hearts of two animals examined. Originally this was considered to be a case of tilmicosin toxicity. However, further investigations discovered that the batch of monensin used on this farm was withdrawn from sale because of an excess level of drug in the preparation (see Tasmanian report). Concurrent use of macrolide antibiotics and monensin can increase the toxicity of monensin due to interference with biotransformation.

NEOSPORA ABORTION IN DAIRY CATTLE

Abortion in cattle caused by the protozoan *Neospora canis* has been confirmed in WA only once before on the basis of foetal serology. However, nine abortions over a three-month period on an Albany dairy farm were thought to be due to this organism. Blood tests revealed positive *Neospora* antibodies in two cows that had aborted but not in four normal cows. The dam of a submitted foetus had a positive titre to *Neospora*. The foetus had multifocal granulomas throughout the brain, the characteristic pathological change in neosporosis.

PINKEYE IN CATTLE AND SHEEP

Two unusual cases of pinkeye were investigated. Both were at the end of winter before any fly activity. A line of sheep from Dudinin, going for slaughter at Narrikup, had a high proportion of blind animals. The eye lesions were typical of pinkeye and a *Mycoplasma* was isolated from conjunctival swabs. The cattle case was at Youngs Siding where 20 cows had severe corneal opacities and *Moraxella bovis* was isolated from conjunctival swabs. *Mycoplasma conjunctivae* and *Moraxella bovis* are the most common causes of pinkeye in sheep and cattle respectively. Flies are thought to be the major mode of spread of the disease, at least in cattle. The reasons why there was such a severe outbreak in these cases is unclear. The *Mycoplasma* isolates will be held frozen until new DNA-based tests are developed.

SUSPECT TOXICITY IN SEAGULLS

Approximately 50 dead and dying seagulls were found near a popular lake at Middleton Beach in Albany, causing concern about public health. Live affected birds were weak with drooping wings and heads and some had excessive, often blood-tinged, salivation. Autopsies on 20 seagulls showed empty stomachs and acute gastroenteritis and a toxic or irritant agent was suspected. However, toxicological analysis of liver samples failed to demonstrate organophosphate residues and there were only low levels of organochlorines, probably as a result of accumulation due to environmental exposure. The clinical signs and lesions suggested a purposive toxin of undetermined nature. Public health officials are investigating further.

MONODON BACULOVIRUS-LIKE INFECTION

As part of a FRDC prawn diseases project, almost 100% of endeavour prawns taken in one sampling from Exmouth showed typical baculovirus occlusion bodies in the swollen nuclei of epithelial cells of the hepatopancreas, some in spectacularly large numbers. These spherical occlusion bodies are different to those of *Baculovirus penaei* (triangular pyramid-shaped crystals), although virtually indistinguishable from those of monodon baculovirus of monodon prawns. It is not known whether this baculovirus is closely related or identical to that of monodon baculovirus.

CRYPTOCOCCOSIS IN A DOLPHIN

A dead dolphin had extensive pneumonia and meningitis caused by the yeast-like organism *Cryptococcus*. The organism was confirmed as *C. neoformans* var *gattii*, which is associated with river gums (*Eucalyptus camaldulensis*) and forest gums (*E. tereticornis*). The source of infection remains unknown since this animal was a non-estuarine species. The other major cause of cryptococcosis is *C. neoformans* var *neoformans*, which is associated with pigeon droppings and rotting vegetation.

Quarterly Disease Statistics

Laboratory testing

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

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

	Akabane		Bluetongue		Bovine ephemeral fever		Enzootic bovine leucosis		Equine infectious anaemia		Equine viral arteritis	
	Tests	+ve	Tests	+ve	Tests	+ve	Tests	+ve	Tests	+ve	Tests	+ve
Oct–Dec 99	1839	286	3092	218	1762	274	2665	8	1584	1	458	19
Jan–Mar 00	1778	741	6436	302	2336	508	1326	0	779	0	445	22
Apr–Jun 00	1345	558	3712	594	1152	162	1734	0	933	6	328	2
Jul–Sep 00	1093	255	4707	654	1596	434	6744	0	1697	11	779	18
Oct–Dec 00	1646	370	5552	393	1937	266	511	0	742	10	388	30
NSW	18	2	511	30	61	12	162	0	491	0	193	20
NT	593	83	378	109	878	173	0	0	12	0	0	0
QLD	743	193	3020	227	710	66	29	0	153	10	4	0
SA	1	0	1274	0	1	0	0	0	6	0	4	0
TAS	27	1	60	0	0	0	7	0	0	0	0	0
VIC	34	0	45	0	63	0	144	0	56	0	168	10
WA	230	91	264	27	224	15	169	0	24	0	19	0

Control activities

BOVINE BRUCELLOSIS

Although bovine brucellosis is now exotic to Australia, surveillance is maintained through abortion investigations and miscellaneous testing of cattle for export or other reasons. A total of 155 abortion investigations were performed during the reporting period — all with negative results for bovine brucellosis. The results of recent brucellosis surveillance are shown in Table 2.

Table 2: Surveillance for bovine brucellosis

	Abortion Investigations		Test for other reasons	
	Tests	+ve	Tests	+ve
Oct–Dec 99	115	0	2719	0
Jan–Mar 00	143	0	2646	0
Apr–Jun 00	195	0	2509	0
Jul–Sep 00	336	0	9569	0
Oct–Dec 00	155	0	1292	0
NSW	47	0	641	0
NT	0	0	23	0
QLD	22	0	294	0
SA	34	0	20	0
TAS	12	0	69	0
VIC	0	0	75	0
WA	40	0	170	0

ENZOOTIC BOVINE LEUCOSIS

Enzootic bovine leucosis (EBL) accreditation programs have been operating in the dairy industries in Queensland and NSW for several years. Victoria, South Australia, Western Australia and Tasmania are undertaking a program of bulk milk testing of all dairy herds. Table 3 shows the number of dairy herds tested free of EBL at the end of the quarter.

Table 3: Dairy herds tested free of enzootic bovine leucosis at 31 December 2000

	NSW	NT	QLD	SA	TAS	VIC	WA	AUS
Free	1516	0	1433	698	679	8085	520	12 931
Herds	1532	0	1463	702	741	8238	520	13 196

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

Table 4: Ovine brucellosis accredited-free flocks at 31 December 2000

NSW	NT	QLD	SA	TAS	VIC	WA	AUS
1250	0	68	499	130	729	86	2762

JOHNE'S DISEASE

Johne's disease (JD) occurs primarily in dairy cattle and sheep in Australia and to a lesser extent in beef cattle, goats and camelids. JD occurs in NSW, Victoria, Tasmania and South Australia. Surveillance programs have not identified endemic JD in Queensland, Western Australia and Northern Territory, and active measures are taken to stamp-out any incursions. Table 5 shows the number of herds and flocks known to be infected. A National Ovine Johne's Disease Control and Evaluation Program will be completed in 2003. Programs for bovine Johne's disease are currently being evaluated. Market Assurance Programs (MAPs) are in operation for cattle, sheep, goats and alpaca, with the number of herds or flocks that have reached a status of Monitored Negative 1 (MN1) shown in Table 6.

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 a fax-back service on 1902 940 579 or on the internet (at http://www.aahc.com.au/jdmap).

Table 5: Herds/flocks with JD at 31 December 2000

STATE	Cattle	Sheep	Goats	Alpacas	Total
NSW	144	508	9	0	661
NT	0	0	0	0	0
QLD	1	0	0	0	1
SA	35	23	0	0	58
TAS	13	21	3	0	37
VIC	1461	36	14	7	1518
WA	0	0	1	0	1
AUS	1654	588	27	7	2276

The herd in Queensland is in quarantine in response to finding an infected animal introduced from an endemic State.

@ In WA, JD has been found in only one goat on one property. However a sheep flock also grazes on the same property. The infected property will be destocked of all sheep and goats for a period consistent with SDRs. Nearly 10 000 animals in 34 herds and flocks have been tested without detection of further infection.

Table 6: Herds/flocks with a JDMAP status of at least MN1/TN1 status at 31 December 2000

STATE	Cattle	Sheep	Goats	Alpacas	Total
NSW	917	334	31	75	1357
NT	0	0	0	0	0
QLD	0	8	0	0	8
SA	136	224	2	30	392
TAS	96	40	1	0	137
VIC	84	133	0	20	237
WA	0	0	0	0	0
AUS	1233	739	34	125	2131

TUBERCULOSIS

Australia was declared a Free Area for bovine tuberculosis (TB) on 31 December 1997. The National Granuloma Submission Program is the major surveillance tool for TB. Table 7 summarises results from the program. At the end of the quarter, TB was detected in a single granuloma from a Queensland property. Traceback and traceforward activities are proceeding (see State report). Table 8 summaries the National Case Register for bovine tuberculosis since 1990.

Table 7: Results of the National Granuloma Submission Program

	Granulomas submitted	TB +ve
Oct–Dec 99	645	0
Jan–Mar 00	900	0
Apr–Jun 00	1193	0
Jul–Sep 00	1200	1
Oct–Dec 00	1153	1
NSW	114	0
NT	0	0
QLD	560	1
SA	98	0
TAS	57	0
VIC	62	0
WA	262	0

Table 8: National case register for bovine tuberculosis

	BTEC			BTEC — impending free					TFAP — free		
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
NSW	1	0	1	0	0	1	0	0	0	0	0
NT	2	1	2	7	5	5	3	4	2	1	0
QLD	5	6	4	1	2	1	1	2	2	0	2
SA	0	0	1	0	0	0	1	0	0	0	0
TAS	0	0	0	0	0	0	0	0	0	0	0
VIC	0	2	1	0	0	1	1	0	0	0	0
WA	0	0	0	1	0	1	1	1	1	0	0
AUST	8	9	9	9	7	9	7	7	5	1	2

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

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

Table 9: Salmonella notifications, 1 October to 31 December 2000

Serovars	avian	bovine	canine	equine	feline	ovine	porcine	other	Total
S. Bovismorbificans	0	6	1	1	0	0	0	0	8
S. Dublin	0	39	1	0	0	0	0	0	40
S. Infantis	0	1	1	0	0	0	1	0	3
S. Ttyphimurium	7	23	3	4	0	3	9	4	53
Other	4	6	6	4	4	0	3	13	40
Total	11	75	12	9	4	3	13	17	144

NORTHERN AUSTRALIA QUARANTINE STRATEGY

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

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

Table 10: Summary of recent NAQS activity

	Oct – Dec 99		Jan – Mar 00		Apr – Jun 00		Jul – Sep 00		Oct – Dec 00		Notes
	Tested	+ve	Tested	+ve	Tested	+ve	Tested	+ve	Tested	+ve	
Aujeszky's disease	98	0	16	0	185	0	0	0	183	0	
Avian influenza	0	0	30	0	119	0	0	0	0	0	
Classical swine fever	98	0	16	0	181	0	0	0	183	0	
Infectious bursal disease	1	0	0	0	92	0	0	0	0	0	
Japanese encephalitis	234	0	342	18	412	14	22	0	127	0	a
Newcastle disease	0	0	30	0	105	0	0	0	0	0	
Porcine reproductive and respiratory syndrome	98	0	16	0	181	0	0	0	183	0	
Surra	248	0	148	0	275	0	0	0	127	0	
Transmissible gastroenteritis	0	0	0	0	0	0	0	0	0	0	
Tropical canine pancytopaenia	2	0	0	0	16	0	9	0	0	0	

a In 1995–97, animals at sentinel sites on islands in the Torres Strait, but not the Australian mainland, seroconverted to Japanese encephalitis during the latter part of the wet season (March–April). In March 1998, seroconversions occurred at a number of sentinel sites on islands in the Torres Strait, and for the first time on the mainland at the tip of Cape York Peninsula. During the first half of 2000, sentinel pigs seroconverted on the island of Badu, but no clinical cases were detected in humans or animals.

Table 11: Number of inspections of insect traps

	Oct – Dec 99		Jan – Mar 00		Apr –- Jun 00		Jul – Sep 00		Oct – Dec 00		Notes
	Tested	+ve	Tested	+ve	Tested	+ve	Tested	+ve	Tested	+ve	
NAQS											
Screw-worm fly	146	0	253	0	144	0	30	0	n/a	0	
AQIS port surveillance											
Asian honeybee					21	0	28	0	28	0	
Screw-worm fly			40	0	35	0	36	0	38	0	

NATIONAL TSE SURVEILLENCE PROGRAM

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

Table 12 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.brs.gov.au/aphb/ntsesp).

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

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

	Oct – Dec 99		Jan – Mar 00		Apr – Jun 00		Jul – Sep 00		Oct – Dec 00	
	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep	Cattle	Sheep
NSW	33	26	29	22	38	25	72	30	38	54
NT	4	0	9	0	1	0	12	0	3	0
QLD	45	2	28	7	38	18	51	16	76	5
SA	3	1	2	0	1	0	3	8	11	44
TAS	2	3	1	0	1	1	2	4	10	4
VIC	22	20	9	14	19	19	54	45	18	18
WA	11	15	9	33	10	30	11	28	18	59
AUS	120	67	87	76	108	93	205	131	174	184

ZOONOSES

The National Notifiable Diseases Surveillance System (NNDSS) of the Communicable Diseases Network Australia New Zealand (CDNANZ) collects statistics about many human diseases. A summary of information about six important zoonoses is submitted to NAHIS each quarter — see Table 13. Extraction of the data from NAHIS inadvertently based the figures for Q4–99 and Q1–00 in previously editions of *AHSQ* on five quarters rather than one.

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

Table 13: Notifications of zoonotic diseases in humans

Disease	Q4-99	Q1-00	Q2-00	Q3-00	Q4-00	Current quarter							
	Australia				AUST	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Brucellosis#	19	7	4	7	11	0	0	0	11	0	0	0	0
Hydatidosis	8	11	5	6	8	0	nn	0	2	0	0	6	0
Leptospirosis	49	60	88	34	62	0	19	5	13	6	0	18	1
Listeriosis	14	23	0	0	14	0	7	0	1	3	1	2	0
Ornithosis	22	22	26	23	40	0	nn	0	nn	2	5	33	0
Q fever	140	153	108	147	131	0	29	0	85	1	0	12	4

nn disease is not notifiable in these States

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

NATIONAL RESIDUE SURVEY

Of 4220 samples tested during the quarter for agricultural and veterinary chemicals, 47 (1.1 %) had residues above the maximum residue limit (MRL). This abnormally high rate of contraventions arises because the Australia New Zealand Food Standards Council (ANZFSC), in the process of considering an application by National Registration Authority to amend MRLs for chlortetracycline (CTC) and oxytetracycline (OTC) to 0.6 mg/kg in kidney, took the decision to delete these MRLs. ANZFSC's policy is to defer consideration of new or increased MRLs for antibiotics until it and the Australian Health Ministers' Advisory Committee have been able to consider appropriately the Final JETACAR Report (see page 8). With the removal of the CTC and OTC MRLs, any detection of these compounds is a contravention of the Food Standards Code. Of the 29 tetracycline detections in pigs, only one was above the Codex and NRA-proposed MRL of 0.6 mg/kg.

The other three antimicrobial contraventions were a sulphadiazine residue in a cull sow that had accidental access to spilled medicated feed in a laneway; a sulphadimidine residue in a pig most likely due to contaminated feedlines; and a neomycin detection in beef (traceback report not yet completed). Three contraventions in beef samples due to low levels of bioresmethrin (for which there is no MRL in cattle) were probably due to contaminated grain treated with a grain protectant, being fed as a supplement. Of the 12 growth promotant detections, eight nortestosterone residues all resulted from endogenous production and the four zeranol residues resulted from natural ingestion. Table 14 summarises the results for the quarter.

Plague locust chemicals in beef cattle

During late 2000, an intensive control operation was mounted to prevent widespread devastation of crops by what was predicted to be the largest locust plague in Australia in 20 years. The effort was concentrated on preventing the formation of major flying swarms. Nationally, more than one million hectares of locusts bands and swarms were treated with insecticides. A targeted program was developed and implemented by the National Residue Survey (NRS) in collaboration with SAFEMEAT and State/Territory departments of agriculture to monitor locust chemicals in beef cattle as reassurance to domestic and international consumers that locust control activities did not compromise the integrity of Australian beef.

Table 14: National Residue Survey, 1 October to 31 December 2000
Each pair of figures gives the number of samples above either the maximum residue limit or the maximum permitted concentration and the number of samples tested.

	NSW		NT		QLD		SA		TAS		VIC		WA		AUS	
Anthelmintics																
cattle	0	63	0	3	0	94	0	13	0	6	0	46	0	14	0	239
pigs	0	12	0	0	0	10	0	6	0	1	0	5	0	4	0	38
sheep	0	114	0	0	0	19	0	51	0	7	0	76	0	62	0	329
other	0	17	0	0	0	17	0	3	0	0	0	13	0	0	0	50
Total	0	206	0	3	0	140	0	73	0	14	0	140	0	80	0	656
Antimicrobials																
cattle	0	115	0	4	0	126	0	25	0	12	1	70	0	33	1	385
pigs	6	71	0	1	13	106	3	37	0	3	6	74	3	39	31	331
poultry	0	98	0	0	0	29	0	18	0	15	0	42	0	21	0	223
sheep	0	65	0	0	0	9	0	24	0	5	0	39	0	26	0	168
other	0	13	0	0	0	14	0	1	0	0	0	9	0	4	0	41
Total	6	362	0	5	13	284	3	105	0	35	7	234	3	123	32	1148
Growth promotants																
	0	195	0	5	5	238	1	37	0	18	0	66	0	5	6	564
cattle	0	15	0	0	0	14	0	6	0	0	0	13	0	6	0	54
pigs	0	4	0	0	0	1	0	0	0	1	0	2	0	2	0	10
sheep	3	64	0	0	0	2	2	40	0	3	1	38	0	62	6	209
other	0	8	0	3	0	19	0	5	0	0	0	3	0	4	0	42
Total	3	286	0	8	5	274	3	88	0	22	1	122	0	79	12	879
Insecticides																
cattle	0	193	0	6	3	184	0	53	0	14	0	73	0	38	3	561
pigs	0	32	0	0	0	32	0	12	0	1	0	29	0	16	0	122
poultry	0	18	0	0	0	5	0	1	0	3	0	8	0	2	0	37
sheep	0	216	0	0	0	15	0	65	0	20	0	114	0	115	0	545
other	0	22	0	2	0	30	0	13	0	7	0	10	0	1	0	85
Total	0	499	0	8	3	280	0	144	0	45	0	234	0	172	3	1382
Metals																
cattle	0	21	0	1	0	36	0	2	0	1	0	19	0	3	0	83
pigs	0	7	0	0	0	9	0	5	0	2	0	11	0	4	0	38
poultry	0	16	0	0	0	5	0	1	0	2	0	8	0	4	0	36
sheep	1	24	0	0	0	4	0	11	0	3	0	17	5	19	6	78
other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	68	0	1	0	54	0	19	0	8	0	55	5	30	6	235
Miscellaneous																
cattle	0	24	0	1	0	34	0	3	0	0	0	17	0	9	0	88
pigs	0	12	0	0	0	6	0	3	0	1	0	10	0	5	0	37
sheep	0	10	0	0	0	0	0	4	0	1	0	7	0	7	0	29
other	0	4	0	0	0	10	0	0	0	0	0	1	0	2	0	17
Total	0	50	0	1	0	50	0	10	0	2	0	35	0	23	0	171

Approximately 300 samples were collected over the risk period (mid-October to mid-January) at export and larger domestic abattoirs in SA and WA, the States assessed as having the highest risk of residues in livestock. No residues above the maximum residue limit were detected.

European Commission review of residue programs

In November, the European Commission (EC) reviewed Australia's chemical residue control systems. The draft report of the review has been received by AFFA, and a response to the issues raised is being prepared. The findings of the review team were generally favourable in terms of Australia's laboratory system and NRS operation of testing programs. The main concerns related to the scope of chemicals tested and the number of samples collected. The EC member countries have to meet very specific requirements for testing. Australia, as an exporter into the EC, is expected to meet these requirements, which take no account of the very different pastoral and agricultural systems in Australia compared to Europe.

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

Contributed by: Jonathan Webber
National Residue Survey, AFFA

SUSPECT EXOTIC OR EMERGENCY DISEASE INVESTIGATIONS

There were 23 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 October to 31 December 2000

Disease	Species	Date	State	Response (key below)	Finding
Asian honeybees	apian	QLD	Nov	1	*Apis mellifera*
Aujeszky's disease	porcine	SA	Dec	2	undetermined encephalitis
Avian influenza	avian	NSW	Oct	2	pasteurellosis
Contagious bovine pleuropneumonia	bovine	VIC	Dec	2	*Pasteurella pneumonia*
Foot-and-mouth disease	bovine	NSW	Dec	3	negative
Hendra virus	equine	QLD	Dec	2	Hendra excluded by viral isolation and PCR
Hendra virus	equine	QLD	Nov	2	Hendra excluded by immunoperoxidase
Hendra virus	equine	QLD	Oct	3	Hendra excluded by viral isolation and PCR
Newcastle disease	avian	VIC	Oct	3	idiopathic head shaking
Newcastle disease	avian	VIC	Nov	3	Marek's disease and parasitism
Newcastle disease	avian	NSW	Dec	2	negative
Newcastle disease	avian	NSW	Nov	2	negative
Newcastle disease	avian	WA	Nov	2	negative
Porcine circovirus type 2	porcine	NSW	Nov	2	DNA consistent with PCV-2
Porcine dermatitis-nephropathy syndrome	porcine	VIC	Nov	2	mosquito allergy
Porcine reproductive and respiratory syndrome	porcine	QLD	Oct	3	porcine dermatitis/nephropathy syndrome
Rabies	equine	WA	Nov	3	negative
Screw-worm fly	avian	QLD	Dec	1	secondary blowfly
Screw-worm fly	avian	NSW	Oct	2	negative
Transmissible spongiform encephalophathies	bovine	QLD	Dec	2	organophosphate poisoning
Vesicular stomatitis	equine	VIC	Oct	3	negative
Viral haemorrhagic septicaemia	piscine	WA	Nov	3	negative

KEY to highest level of response:
1 Field investigation by Government Officer
2 Investigation by State or Territory government veterinary laboratory
3 Specimens sent to the Australian Animal Health Laboratory (or CSIRO Division of Entomology)
4 Specimens sent to reference laboratories overseas
5 Regulatory action taken (quarantine or police)
6 Alert or standby

NAHIS contacts

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

Name	Role	Phone	Fax	e-mail
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Animal Health Surveillance

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