ANIMAL HEALTH SURVEILLANCE QUARTERLY
Newsletter of Australia's National Animal Health Information System

**Volume 4** **Issue 4**
**Quarterly Report for 1 October to 31 December 1999**

# Preface

The report of the Joint Expert Technical Advisory Committee on Antibiotic Resistance (JETACAR) was released in October, and background to this report leads this issue. There is also an article on a workshop held in November to consider better ways to coordinate wildlife health issues. There are also two articles concerning aquatic animal health — the preparation of AQUAVETPLAN (an aquatic version of AUSVETPLAN) and a report on some simulation preparedness exercises.

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

*Gardner Murray*
*Australian Chief Veterinary Officer*

# Antibiotic resistance report released

The report of the Joint Expert Technical Advisory Committee on Antibiotic Resistance (JETACAR) was released to the public jointly by the Minister for Health and Aged Care, The Hon. Michael Wooldridge, and the Minister for Agriculture, Fisheries and Forestry, Australia, The Hon. Warren Truss on 22 October 1999.

## Background

The development of antibiotic resistance in bacteria is an inevitable consequence of antibiotic use. Although medical antibiotic resistance experts generally agree that more than 95% of antibiotic resistance problems in human bacterial infections are due to medical use of antibiotics, there is increasing questioning of the use of antibiotics in food-producing animals. Medical concern with antibiotic resistance in general, and with food animal-generated antibiotic resistance in particular, has been increasing.

There have been a number of reports on this issue in the United States, the United Kingdom and the European Union (EU). EU studies in the 1990s increased concern over the use of the glycopeptide antibiotic avoparcin as a growth promotant in pigs and poultry because of the emergence of vancomycin-resistant *Enterococci* infections in hospitalised immunocompromised people (vancomycin is the related glycopeptide used in human medicine). The irony for the animal industries is that avoparcin had been legally registered for animal growth promotant use in Europe (and Australia) for 20 years, because, at the time of registration, medical experts did not consider vancomycin an important antibiotic. The

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EU subsequently suspended the use of avoparcin in animals as a growth promotant, and the manufacturer, Roche, recently ceased manufacturing the chemical and it has been withdrawn from the Australian market for commercial reasons. The EU has also suspended the use of six other antibiotic growth promotants as a 'precautionary' measure while more scientific evidence is gathered before a review in two to three years time.

A World Health Organization conference on antibiotic resistance in Berlin in 1997 recommended against the use of antibiotic growth promotants if the antibiotic was also used in human medicine. Other recommendations were for more research on non-antibiotic growth promotants, accurate assessment of the risk to human health of antibiotic use in food animals, enhanced monitoring for antibiotic resistance, and prudent antibiotic use in animals.

In Australia, in response to growing concern over the issue, the Minister for Health and Aged Care and the Minister for Agriculture, Fisheries and Forestry jointly established a Joint Expert Technical Advisory Committee on Antibiotic Resistance (JETACAR) in April 1998.

JETACAR comprised experts in human health, veterinary medicine and primary industry. Its tasks were to assess the scientific evidence of a link between the use of antibiotics in food-producing animals, review the emergence and selection of antibiotic-resistant bacteria and their spread to humans, and recommend future risk management strategies.

## The JETACAR Report

The report (*The Use of Antibiotics in Food-Producing Animals: antibiotic-resistant bacteria in animals and humans)* is comprehensive and recommends a broad range of measures to address the issue of antibiotic resistance. The 22 recommendations fall into five key elements:

- regulatory controls to ensure responsible use of antibiotics in humans and food-producing animals;
- monitoring and surveillance of the use of antibiotics and changes in antibiotic resistance patterns;
- infection prevention strategies and hygiene measures to reduce the need for antibiotics;
- education, including prudent-use codes of practice; and
- further research into antibiotic use and alternatives to antibiotics.

The JETACAR report is available on the internet (at http://www.health.gov.au/pubs/jetacar.htm).

## Management of antibiotic resistance

Although there is no irrefutable experimental evidence for the transfer of animal-generated antibiotic resistant bacteria to humans, there is very good molecular biological evidence for the transfer of animal-generated resistance genes from animal bacteria to human bacteria — probably through food. The key question is how frequently this event occurs, and how important it is, given that the bulk of human antibiotic-resistant bacteria are generated by human antibiotic use.

To answer these questions, a risk analysis process is required. However, risk analysis needs good scientific information on the antibiotic resistance picture in animal and human bacteria as well as information on how various antibiotics are used in animal production and in medicine. Australia does not currently have this information.

The JETACAR recommendations present a strategic management approach to the issue of antibiotic resistance. The key to the success of this proposal, if implemented, is the establishment of an independent body to review and analyse information in a risk assessment framework. To do this, JETACAR proposed the establishment of a small independent group to collate and analyse data before undertaking formal risk assessment and advising the National Registration Authority on animal antibiotic issues, and the Therapeutic Goods Authority on medical antibiotic issues, for regulatory or corrective action.

The Ministers have agreed to establish a steering committee comprising members of both Departments to examine the JETACAR recommendations.

What is clear, at this time, is that the strategic management of antibiotic resistance will be an ongoing undertaking with international ramifications for human and animal health, and for international trade in animal products.

*Contributed by Terry Nicholls*
*JETACAR member*
*National Office of Animal and Plant Health, AFFA*

# Newcastle disease

No further cases of Newcastle disease (ND) were identified in association with the outbreak in August 1999 at Schofields in Sydney's outer western suburbs. However, virulent ND virus was retrospectively isolated from an adjoining broiler flock, after the birds had been processed.

Surveillance in the Mangrove Mountain area following eradication of the ND outbreak earlier in 1999 was completed by the end of November. Although initial testing indicated that eradication had been successful, virulent ND virus was isolated retrospectively from three broiler flocks after the birds had been processed. The remaining flocks in the area were vaccinated, and surveillance in the area is continuing.

Since early January 2000, virulent ND virus has been identified at the following locations in Western Sydney:

- Orchard Hills — multi-aged layer farm of 15 000 caged layers;
- Llandilo — multi-aged layer farm of 9500 caged layers; and
- Rossmore — layer farm of 23 000 caged layers, which included 15 000 pullets introduced from Mangrove Mountain.

The affected farms experienced problems in recently introduced (4–8 weeks post-introduction) starter pullets, particularly white eggs from brown-egg strains and some mortality with characteristic nervous signs. Mortalities were low and other age groups remain healthy.

In addition, in February 2000, two infected farms were identified in the Tamworth area, one a pullet-rearing enterprise with about 18 000 pullets and the other a breeding farm of about 14 000 birds. Surveillance is being undertaken on other farms in the Tamworth area. Two farms have also been identified with serological titres suggestive of recent infection with virulent ND virus. These farms, and two other farms with tracing connections, will be the subject of more intensive examination to identify the source of infection.

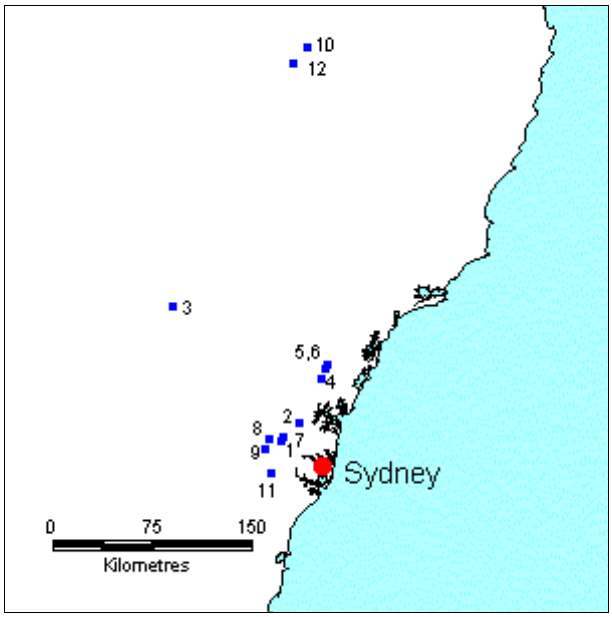
All outbreaks to date have been caused by virulent ND virus of Australian origin. All infected flocks have been quarantined and the flocks in the Sydney Basin area have been vaccinated.

The Consultative Committee on Emergency Animal Diseases (CCEAD) has determined that the disease is not eradicable in the affected areas of New South Wales in short to medium term, and governments and the poultry industry are developing a long-term national management plan for the disease for the disease.

*Contributed by: Evan Sergeant, NSW Agriculture*

**Figure 1: Location of identification of virulent Newcastle disease**

| Key | Location | Date of confirmation |
|---|---|---|
| 1 | Dean Park | 21 Sep 1998 |
| 2 | Glenorie | 21 Sep 1998 |
| 3 | Rylstone | 25 Sep 1998 |
| 4 | Mangrove Mountain | 01 Apr 1999 |
| 5 | Kulnura | 17 Jul 1999 |
| 6 | Peats Ridge | 17 Jul 1999 |
| 7 | Schofields | 21 Aug 1999 |
| 8 | Llandilo | 12 Jan 2000 |
| 9 | Orchard Hills | 12 Jan 2000 |
| 10 | Moonbi | 04 Feb 2000 |
| 11 | Rossmore | 14 Feb 2000 |
| 12 | Calala | 20 Feb 2000 |



# Wildlife health issues

## AUSVETPLAN update

The AUSVETPLAN Wild Animal Management Manual has been completed, approved and released. Wild animals include feral animals, exotic fauna and native wildlife. The manual provides both strategic guidelines and operational procedures for managing wild animals during an animal health emergency in Australia. It provides more strategic considerations and is less detailed for specific procedures than the first edition of the AUSVETPLAN wild animal manual, which it replaces.

In the first part of the manual, important ecological factors for 12 wildlife groups are summarised, as well as the likely diseases of significance. A decision-making key is included to guide decision making by personnel involved on operations involving wild animal species. The manual emphasises the importance of thinking through the appropriate action in any particular situation.

The second part of the document provides guidelines for disease sampling and surveying, reducing and containing a wild animal population.

The manual should be a valuable training tool as well as a guidebook for any particular disease outbreak situation. The document is available at the AUSVETPLAN page on the NAHIS website (at http://www.brs.gov.au/aphb/aha).

## Coordination of wildlife health issues

A workshop was held in November 1999 to consider how wildlife health issues could be coordinated better through the development of a national wildlife health centre or network. The meeting was funded by the Wildlife Exotic Disease Preparedness Program (WEDPP), a program within Agriculture, Fisheries and Forestry — Australia.

More than 60 representatives from Commonwealth and State/Territory departments of health, agriculture and conservation, universities, animal harvesting and hunting industries, diagnostic pathology services, zoos, and others, attended the workshop. Existing national and regional wildlife health organisations including centres in the United States, Canada, India, New Zealand, France, and the European Union were considered. Case studies were used to highlight recent significant wildlife diseases and to identify benefits and gaps in the existing 'systems'.

The objectives for such a centre would be to:

- establish and coordinate a network of wildlife health expertise and resources;
- develop and operate a national database of wildlife health information;
- identify wildlife health surveillance and research needs and priorities;
- promote the development of regional and national wildlife health emergency preparedness and response strategies;
- facilitate and monitor field investigations of wildlife disease incidents;
- advance education and training in wildlife health;
- provide information about wildlife health to the community; and
- seek and secure resources to achieve these objectives.

A steering committee was appointed to develop a proposal to be put to funding bodies. It was envisaged that the first submission for funding will be for a project officer, initially as a secondment or on a temporary basis to initiate key/priority functions of the centre or network. Members of the committee are:

Chris Bunn, AFFA
Graham Eggleston, NSW Agriculture
Tony English, University of Sydney/AVA
Heather Gardner, AQIS
Gerry Maynes, Environment Australia
Tony Robinson, CSIRO Wildlife and Ecology
Karrie Rose, Taronga Park Zoo
Karen Viggers, Conservation Biology
Pam Whiteley, Wildlife Disease Association

The centre or network would begin by using and linking existing facilities to provide a national system. The workshop was unresolved on whether 'centre', 'network' or another term should be used. However, it was agreed that it would not interfere with the roles of existing organisations — the centre or network would be designed to fill in the gaps, and facilitate cooperation and communication. The meeting agreed to accept the offer to use an existing website (Wild Health Australia: www.wha.org.au) and to establish regional groups based on representatives from each State and Territory.

*Contributed by Chris Bunn*
*National Office of Animal and Plant Health, AFFA*

# Import conditions database on AQIS web site

ICON is the quarantine import conditions database of the Australian Quarantine and Inspection Service's (AQIS). More than 13 000 commodities are listed on ICON — everything from flowers and feathers to honeybees and horses, circus animals and animal artefacts.

This database is now available on the AQIS web site (at http://www.aqis.gov.au/icon). ICON enables importers and the public to check the conditions and treatments required for a wide variety of commodities imported into Australia. Knowing what commodities can and can't gain entry into Australia, what the entry requirements will be, and what treatments may be necessary makes cargo clearance faster and business easier for importers.

ICON is a simple and convenient way to obtain information about Australian import requirements for a range of commodities. It can be used to determine whether a commodity needs a quarantine permit and/ or treatment, or whether there are any other quarantine requirements.

Quarantine conditions can change frequently, and importers are responsible for ensuring the information they have is up to date. Because ICON is updated every 24 hours, it is a quick and easy way to stay in touch with these changes.

Navigating ICON is easy: the database has been divided into five sections — home, search, alerts, help and 'e-mail us' — so it is simply a matter of choosing the most appropriate area and following the instructions.

*For further information contact your regional AQIS Office or the ICON Administrator by e-mail at icon@aqis.gov.au or by phone (02) 6272 5453.*

# National port surveillance for exotic pests of bees

A national port surveillance program is being established to enhance the early detection of exotic bee parasites. Exotic parasites of primary quarantine concern to the Australian apiary industry are varroa mites, tropilaelaps mites and tracheal mites. Recent bee incursions at the ports of Darwin (1998) and Brisbane (1999) have highlighted the very real threat of introduction of exotic bee parasites being faced by the Australian apiary industry. Incursions by exotic bees via containerised cargo transported on ocean-going vessels present a significant risk for the introduction, establishment and spread of exotic bee parasites in Australia.

A key element of the national port surveillance program is that sentinel hives will be provided and maintained at selected ports by cooperating beekeepers thereby minimising program establishment and maintenance costs. Sentinel hives will be located within reasonable proximity (e.g. 500 m) to selected ports. Surveillance will be conducted quarterly in each State under the supervision of State apiary officers and results summarised nationally and included on NAHIS. As well as providing an enhanced early detection capacity, the port surveillance program will provide additional data to support health certification for live bee exports.

Each State and Territory will have officers trained to undertake the surveillance in conjunction with cooperating beekeepers. Two hives will be maintained at each sentinel site to ensure a continuity of surveillance if one hive swarms or becomes queenless. Samples of brood and adult bees from sentinel hives will be submitted to diagnostic laboratories to be examined for the presence of exotic bee parasites.

The ports selected for the program (listed below) receive a significant volume of containerised cargo, and hence are considered to present a greater risk of bee incursions than ports that primarily handle bulk shipment commodities. Additional ports may also be included subject to port suitability and the availability of cooperating beekeepers.

| | |
|---|---|
| New South Wales: | Sydney, Port Botany, Darling Harbour, White Bay, Garden Island Navy Base |
| Northern Territory: | Darwin, Gove |
| Queensland: | Brisbane, Gladstone, Townsville; |
| South Australia: | Adelaide, Port Augusta |
| Tasmania: | Hobart, Bell Bay, Devonport, Burnie |
| Victoria: | Portland, Geelong, Melbourne |
| Western Australia: | Wyndham, Broome, Port Hedland, Dampier, Geraldton, Fremantle, Bunbury, Albany, Esperance. |

*Ian Peebles*
*Australian Quarantine and Inspection Service*

# Australian bat lyssavirus surveillance

Surveillance of bats for Australian bat lyssavirus (ABL) continues to be undertaken by all States and Territories of Australia. The surveillance is largely passive, primarily consisting of 'rescued' sick, injured or dead bats, and bats presented for ABL exclusion subsequent to a potential human exposures. Active surveillance of wild-caught bat populations has been conducted by a QDPI group as part of an ongoing research project targeting emerging diseases of bats. In 1999, with funding support from the Wildlife and Exotic Disease Preparedness Program (WEDPP), and with the cooperation of Northern Territory and Western Australian colleagues, this group extended their surveillance of wild-caught populations across northern Australia.

Table 1 shows the passive surveillance data supplied by State NAHIS coordinators. Although species are not listed in the table, 7 of the 12 megabat species and at least 23 of the 57 microbat species in Australia have been surveyed. However, the number of bats surveyed per species is limited, with a sample size greater than 30 being achieved in only four of the megabat species and three of the microbat species. The median sample size per species was 10.

ABL has been identified in bats in the Northern Territory and all States except Western Australia and South Australia. In addition to the ABL infection previously reported in the four (megabat) flying fox species and the microbat yellow-bellied sheath-tailed bat, evidence of infection has been found in a possible four additional microbat species in NSW — two unidentified microbats, and two bats of the genus *Nyctophilus* (long-eared bats), that gave weak fluorescent antibody test (FAT) positives on autolysed tissue.

In assessing relative surveillance efforts, it should be noted that the distribution and abundance of bat species are not uniform across Australia. For example, the normal range of flying foxes excludes South Australia and Tasmania. The sole megabat representative tested in Tasmania (and found sero-positive) was a grey-headed flying fox found on King Island, presumably after a wind-assisted passage across Bass Strait. In Western Australia, although flying foxes are abundant in the north, people are not, and thus submissions are fewer.

The findings of the Queensland group's research are currently in preparation for publication. In summary, of about 400 wild-caught flying foxes from Queensland and northern Australia, none has shown evidence of ABL infection by FAT on brain smears. Although the sample is non-random, the finding is consistent with a very low disease prevalence in the general flying fox population. Such an estimate contrasts strongly with that indicated by the (non-random) passive surveillance sample largely drawn from the population of sick and injured bats. Thus, the group with which members of the public, wildlife carers, and wildlife heath professionals are most likely to have contact appears to present the highest risk of exposure to ABL infection.

*Contributed by Hume Field, Animal and Plant Health Service, Queensland DPI, Brisbane.*

*A ten-page pamphlet 'Information on zoonotic bat viruses for veterinary practitioners' endorsed by the Department of Agriculture, Fisheries and Forestry — Australia, the Australian Veterinary Association, and the Communicable Diseases Network Australia New Zealand can be obtained from the internet (at www.brs.gov.au/aphb/aha).*

**Table 1: ABL surveillance of opportunistically sampled bats from 1996 to 1999**

Positive includes specimens testing positive by at least one of fluorescent antibody test, immunoperoxidase staining, polymerase chain reaction, or serology. The 1999 data are incomplete (six months from Queensland and WA; one month from NSW and SA, and none from Tasmania and Victoria).

| State | Megabats | | Microbats | | Unspecified | | Total | |
|---|---|---|---|---|---|---|---|---|
| | Positive | Tested | Positive | Tested | Positive | Tested | Positive | Tested |
| Qld | 50 | 746 | 5 | 157 | 0 | 69 | 55 | 972 |
| NSW | 13 | 196 | 4 | 50 | 0 | 4 | 17 | 250 |
| Vic | 1 | 51 | 0 | 29 | 0 | 0 | 1 | 80 |
| Tas | 1 | 1 | 0 | 12 | 0 | 0 | 1 | 13 |
| SA | 0 | 6 | 0 | 4 | 0 | 10 | 0 | 20 |
| WA | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 4 |
| NT | 1 | 37 | 0 | 15 | 0 | 8 | 1 | 60 |
| Total | 66 | 1037 | 9 | 270 | 0 | 92 | 75 | 1399 |

# National Arbovirus Monitoring Program

The seasonal nature of arboviruses and their vectors means that viral and vector activity are usually less intense in winter and spring than during summer and autumn. Laboratory testing of stored sentinel sera and bloods, and identification of preserved insect trap collections are normally completed during this lull in activity. In addition, new animals are left at sentinel sites for the coming year, vector traps are serviced or replaced, and the NAMP Management Committee considers modifications to improve the efficiency of the previous year's program.

During the last six months of 1999, southern Australia remained free of bluetongue, Akabane and bovine ephemeral fever (BEF) viral activity. *Culicoides brevitarsis* is the insect vector responsible for the spread of bluetongue and Akabane viruses in the infected zone to the north of the southern free region. This vector was not detected at any insect trapping site in Victoria, Tasmania, South Australia, south of 16°S in Western Australia or south of 32°S in New South Wales.

Minor bluetongue virus activity was detected in sentinel cattle in the Northern Territory (NT) in July, August and December. The only bluetongue virus activity in Queensland sentinel cattle was in the central coast early in the third quarter, and in the fourth quarter of 1999.

Akabane virus infected cattle in two NT sentinel herds in August, and was widespread in the NT during the last quarter of 1999. In Queensland, the virus was detected only on the central coast during the third quarter, and had extended to the southern half of the State during the fourth quarter.

There were clinical cases of BEF in the Darwin area during the third quarter, when sentinel cattle in the two herds near Darwin seroconverted. BEF was more widespread in the NT during the fourth quarter. BEF infections occurred sporadically throughout northern and eastern areas of Queensland during the third quarter, with most activity occurring in September, probably the result of increasing mosquito activity in the early spring. BEF viral activity was restricted to the Queensland central coast later in the year.

During the period, viral and vector information from this and earlier years has been entered into the NAMP database. This information was used for the preparation of the historical treatise on arboviruses (which is nearing its final draft) and for developing the geographic information system vital for the Northern Cattle Export Enhancement Program (see *Animal Health Surveillance Quarterly* Vol. 3, No. 4).

*Geoff Gard*
*Commonwealth NAMP Coordinator*

# Aquatic animal health

## AQUAVETPLAN

AQUAPLAN, Australia's National Strategic Plan for Aquatic Animal Health (see *AHSQ* Vol. 4, No. 3), has a specific program to address Australia's preparedness and response capabilities for aquatic animal disease outbreaks. A component of this is the development of AQUAVETPLAN, Australia's veterinary emergency plan for aquatic animal disease .

AQUAVETPLAN is based on AUSVETPLAN, the terrestrial animal emergency disease management plan. It will comprise a series of operational manuals to manage emergency aquatic animal disease outbreaks in Australia — the what, when, where and how — to complement (but not replace) existing industry and State/Territory government arrangements. The manuals are being developed progressively.

The Control Centre Manual describes the roles of personnel during the various phases of activation (investigation, alert, operational and stand-down) of an aquatic disease emergency response. It also describes the management and organisation of control centres from infected premises right through to local, State/Territory and Commonwealth levels.

The Enterprise Manual addresses preparedness and response options at a generic level (i.e. independent of a confirmed disease diagnosis, but considering the extent to which control over water and aquatic animals is possible). It also considers industry sector information for disease control, grouped into open water industries (e.g. wild catch), semi-open water industries (e.g. salmon or tuna net pens), semi-closed water industries (e.g. ponds), and closed water industries (e.g. aquaria).

Furunculosis is the first of a series of specific AQUAVETPLAN Disease Strategy Manuals to be developed. The format and content of this series of manuals will be similar to the AUSVETPLAN Disease Strategy Manuals so that terrestrial animal health professionals trained in such procedures can work efficiently with these documents in the event of an aquatic animal disease emergency. The diseases are chosen in consultation with industry and Government from the National List of Reportable Diseases of Aquatic Animals and will alternate between host animal, disease agent and enterprise system. The three sections of the manuals include the nature of the disease, general principles of control, and response options for Australia.

## Simulation exercises for control of emergency disease outbreaks

At the AQUAPLAN workshop in June 1999, participants agreed that a series of simulation exercises to test preparedness for disease incursions was a major priority for the aquaculture industries. The Queensland Department of Primary Industries (QDPI) and the Australian Prawn Farmers Association (APFA) were the first to volunteer for such an exercise.

The exercise was designed and conducted by Iain East and Grant Rawlin of the National Office of Animal and Plant Health, AFFA. A meeting was held with QDPI and members of the prawn farming industry to discuss the scope of the exercise and to review the AQUAVETPLAN Control Centre and Enterprise manuals, and assess key resources in designing an effective response and control strategy for emergency disease incidents. The meeting decided that several exercises would be held over three days: a simulation of the State Disease Control Headquarters (SDCHQ) on one day followed by two 'tactical exercises without troops' — one on the Logan River and one at Walkamin on the Atherton Tableland.

During the SDCHQ exercise, key managers of the Fisheries Section of QDPI, together with staff of the Animal and Plant Health Service, the Queensland Fisheries and Boating Patrol, the Queensland Environment Protection Agency, and APFA met to plan the response to an outbreak of 'prawn blight' (a fictitious disease with more than superficial similarities to white spot syndrome virus). The participants dealt with a range of problems ranging from disease tracing and response options through to poachers and public relations. The day was successful in building contacts between the various government departments and increasing awareness of the need to plan for disease incidents. Major issues arising during the day included compensation for compulsory slaughter, and relations with industry, the public and the media. The day concluded with Carson Creagh from AQIS Public Relations Section giving a presentation on dealing with the media.

On the following day, about 20 members of QDPI and 15 members of the prawn farming industry met at Gold Coast Marine Aquaculture to address practical problems associated with responding to the disease outbreak. Small groups of participants tackled problems such as water control, quarantine, emergency harvest and disinfection/ decontamination. The day highlighted the value of the producers' knowledge in managing a response on the farm. It was also clear from the exercise that the strong relationship between QDPI and the producers is critical to a productive industry.

On the final day, a similar field exercise was held at Walkamin Research Station involving a smaller group of QDPI staff and industry members. Being at a location remote from the State head office highlighted a number of problems including identifying sufficient staff and resources to manage a response. On the positive side, relationships between various government departments and with industry were strong.

Overall, this series of exercises introduced some 70 members of QDPI and industry to issues associated with managing emergency disease incidents, developed an appreciation of the need for pre-emptive planning, and identified procedures to respond effectively to emergency disease incidents.

A second simulation exercise has recently been conducted with the Victorian Department of Natural Resources and Environment and the finfish industry. A third is planned with the salmon industry and the Tasmanian Department of Primary Industries, Water and Environment.

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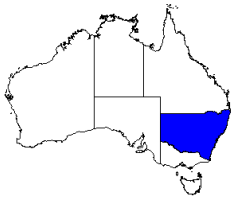
# State and Territory Reports

## New South Wales

*Contributed by:*
*Evan Sergeant*
*NSW Agriculture*



### Anthrax

Anthrax was diagnosed by positive smears in two of six submissions for anthrax. One case was in a two-year-old steer from Nyngan Rural Lands Protection Board (RLPB), where three calves had died one week previously. The other case occurred in a sheep flock at Bourke RLPB where 100 of 1700 sheep (6%) were found dead. Both cases occurred near dams, exhibited classical signs of the disease, and were in areas where anthrax has previously occured.

### Helminths

Helminthosis in sheep and goats in many areas resulted from the good rainfall and mild to warm weather experienced by much of State during the quarter. Clinical haemonchosis with deaths was seen not only in the *Haemonchus*-endemic areas in the north of the State, but also in other regions where the disease occurs sporadically. Problems attributed to *Ostertagia* and/or *Trichostrongylus* were seen over much of NSW.

There were high egg counts have occurred in the western areas of the State. Most of the larval differential counts, when requested, were *Trichostrongylus* spp., with a low percentage of *Haemonchus* spp. There has been a tendency that such a count is not done to save costs. However, drenching on high egg counts alone may lead to the wrong drench being used and possibly even wrong management advice being given.

In December, NSW Agriculture issued a statewide news release warning producers of the favourable conditions for internal parasites of livestock. Producers were encouraged to follow the recommended control program for their area, and to be careful to monitor their worm control regularly using 'Wormtest' It was also noted that worms are thought to cost the Australian sheep industry approximately $220 million annually, with most of this loss being due to subclinical parasitism.

### Recreational pig shooting aids surveillance

Recreational pig shooting has been put to good use. A staff member of the Health Department at Bourke has added a very useful component to the hunting urge by collecting blood samples from shot pigs to monitor arbovirus activity in the district. The serum samples, collected from boars approximately two-years of age, were also submitted to the regional veterinary laboratory at Orange and tested for *Brucella abortus* and leptospirosis. The samples were negative for *Br. abortus,* but were positive for both *Leptospira pomona* and *L. bratislava*.

### Bovine Johne's disease

At the end of the quarter 1060 herds (with 127 061 head of cattle) had been tested in NSW under CattleMAP, the Bovine Johne's Disease (BJD) Market Assurance Program. Of these, 334 herds (35 992 cattle) have had 2 screening tests, and 63 herds have had 3 negative tests. The increase (from 947 herds at the start of the quarter) is most likely the result of increased testing in RLPBs aimed at meeting Protected Status for BJD.

### Ovine Johne's disease

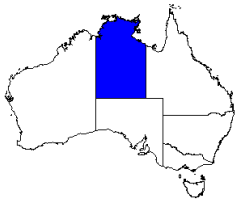
At the end of the quarter there were 308 flocks in SheepMAP, the Australian Sheep Johne's Disease Market Assurance Program. Of these, 303 have a status of MN1 and five a status of MN2. During the quarter, 11 new flocks entered the program with a status of MN1. There were seven flocks that reverted to non-assessed and two flocks that progressed from MN1 to MN2.

**Disease Watch Hotline — 1800 675 888**

The Disease Watch Hotline is a toll-free telephone number that connects callers to the relevant State or Territory officer to report concerns about any potential exotic or other emergency disease situation. Anyone suspecting an exotic disease outbreak should use this number to get immediate advice and assistance.

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

## Northern Territory



*Contributed by:*
*Diana Pinch*
*NT DPIF*

### New CVO

Brian Radunz was appointed to the position of NT Chief Veterinary Officer in November.

### Horses

Hendra virus was excluded as the cause of death in a horse that died acutely in the Katherine region. On post-mortem examination, there was excess blood-tinged pleural fluid and acute interstitial pneumonia was seen on histological examination. Various tests at the Australian Animal Health Laboratory (AAHL) ruled out Hendra virus.

An outbreak of strangles occurred in the Katherine region. S*treptococcus equi* subsp. *equi* was isolated from a horse that had a sudden onset of coughing and swollen submandibular lymph nodes. The owners of the two properties involved in the outbreak had shared transport and gear on trips to campdrafts. On one property, one horse became affected but recovered after treatment. On the other property, one horse died from about 50 horses affected. Following vaccination and quarantine precautions, no further spread was reported. Despite increasing popularity of sporting horse events, strangles has rarely occurred in the region.

### Cattle

Over a two-week period, seven cattle died in a herd of 1800 head from an eastern Barkly Tablelands property. Clinical signs included weight loss and diarrhoea. A *Salmonella* spp. was isolated from several organs (including the brain) and caecal contents. Histological changes were consistent with salmonellosis.

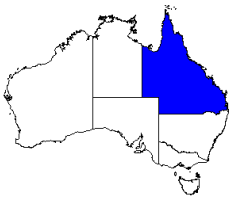
Some Brahman breeder cattle on a property in the Katherine region were weak and slow at mustering, with a few deaths. Botulism was suspected, but when blood samples were collected, anaemia was noted. Abundant *Anaplasma marginale* organisms were found on examination of blood smears.

Two properties in the eastern Barkly Tablelands lost a significant number of two-year-old heifers during October. The cause was thought to be bovine ephemeral fever which is not usually a problem in October.

### Melioidosis

Melioidosis (caused by *Burkholderia pseudomallei*) has again been diagnosed with the wet season in the north. The bacterium has been cultured from a four-week-old goat with hindleg paralysis; from the scrotum of a dog several days after castration carried out to treat a swollen testicle; and from a 45-year-old gibbon that had come to Darwin from Melbourne six months earlier.

## Queensland



*Contributed by:*
*Janet Berry*
*Queensland DPI*

### Second bee alert in Brisbane

A nest of Asian bees (*Apis cerana)* was detected on 29 December 1999 in the steel panels of a grader imported from Lae, Papua New Guinea, at the Port of Brisbane Fisherman Islands at the mouth of the Brisbane River.

Cleaning contractors found the nest in the metalwork and contacted Australian Quarantine Inspection Service (AQIS) officers who responded quickly and destroyed the bees by fumigating the grader. The nest was quite large with an estimated 5000 bees. A second abandoned nest was found on a crane in the same consignment, and the remnants of this nest were being robbed by the Asian bees. This incursion was unrelated to the Asian bees discovered on a ship berthed at Hamilton last September (*AHSQ*, Vol. 4, No. 3).

A surveillance operation was conducted in the area to ensure all the bees were destroyed. The serious bee mite, varroa, was found on some of the bees destroyed at Fisherman Islands. Although very unlikely, it was possible that local bees may have picked up mites left by these Asian bees when foraging prior to destruction. For this reason, a Quarantine Area was declared within a 6-km radius of the Fisherman Islands site with all bee hives within the zone subject to Quarantine Area restrictions. Further identification of the bees and mites has established that the varroa involved is a strain that is incapable of affecting *Apis mellifera*, the domestic bee.

### Bovine Johne's disease

Johne's disease (JD) was diagnosed on faecal culture in a five-year-old Jersey cow introduced from Victoria in 1996. A previous faecal culture in 1998 had been negative for JD. Official control measures are in place on the property.

### Glasser's disease in pigs

*Haemophilus parasuis* was diagnosed as the cause of 22 dead and 100 sick pigs aged 12–16 weeks from a group of 400 at a piggery in November. In December, a further 15 deaths and 150 sick pigs were also attributed to Glasser's disease in the same piggery. The main sign was sudden death.

### Increase in human leptospirosis

In 1999, human leptospirosis increased substantially in Queensland with 232 cases notified. The average for the previous eight years was 66. Most reports originated from the far north of the State during the first half of the year and were associated with a prolonged wet season. Many serovars were identified including *zanoni* (20%), *hardjo* (16.1%), *australis* (10.3%), *pomona* (5.9%) and *canicola* (3.2%).

### Melioidosis in goats

In a herd of 26 goats, three were serologically positive for *Burkholderia pseudomallei*. The goats had a history of loss of condition and weakness in the hindquarters, and the area was known for cases of meliodosis. The owner was concerned about risk of this zoonotic disease spreading from the goats to his children. Information on the disease was provided.

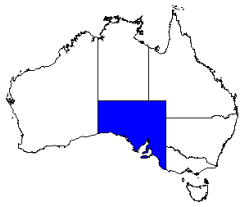
### Footrot in sheep

Ovine footrot was diagnosed on two properties near the NSW border. *Dichelobacter nodosus* was isolated. Quarantine has been imposed on both properties and they are to be destocked direct to slaughter. Physical inspection of neighbouring flocks detected no further cases.

### Nitrate poisoning in cattle

Nitrate poisoning caused the deaths overnight of seven 7–10-month-old cattle in a group of 350 being weaned in yards. Hay that had been irrigated with effluent from a meatworks had been fed to the cattle for two weeks. The hay contained 8% nitrate. Levels above 1.5% are considered unsafe for livestock.

## South Australia



*Contributed by:*
*Kim Critchley*
*PISA*

### Infectious laryngotracheitis in fowl

A spate of outbreaks of infectious laryngotracheitis in broiler flocks about a week after the first pickup of birds suggested transport of the virus on poorly sanitised and shared equipment. In response, all companies have been vaccinating at-risk flocks using the A20 strain. Many have experienced reactions about five days after vaccinating, usually a doubling of mortality in combination with conjunctivitis and respiratory distress.

### Pasteurellosis with severe respiratory disease

Cattle on a number of neighbouring properties in the south-east of the State died with a quite severe respiratory disease, extensive pulmonary consolidation and poor response to medication. Testing for bovine pleuropneumonia proved negative. *Pasteurella multocida* was grown from lung samples.

### *Rhodococcus* in a foal

A six-month-old horse presented with depression and colic. Although a course of antibiotics alleviated the problem, the animal died a month later. Necropsy revealed extensive abdominal lymphadenitis and *Rhodococcus equi* was cultured.

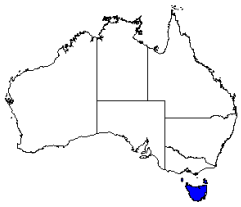
### Field surveillance

A pilot project is being developed to access practitioners' information on livestock diseases collected as part of private routine activities. There will be incentive payments and subsidised laboratory fees to encourage specimen submissions.

The project was used to investigate a problem in which, each spring, soon after being moved onto pasture bordering the lakes at the Murray mouth, a small number of the cattle develop aggressive behaviour with incoordination when approached and many eventually die. The local practitioner submitted a range of specimens from which the major abnormalities detected were pulmonary fibrosis, extensive hepatic necrosis and fibrosis. There was little inflammation. It is thought the lesion is primarily cor pulmonale, possibly due to a plant toxin.

# Tasmania

*Contributed by:*
*John Elliott*
*DPIWE, Tasmania*



## Notifiable diseases

A case of European foulbrood was detected. Two suspected animal cases of Q fever proved negative. Four cattle were tested for hydatids, with two being positive. Two cattle were tested for *Listeria monocytogenes* and were positive. Of 71 accessions from various species tested for salmonellosis, only eight proved positive (seven cattle herds and one wildlife specimen). Four of six herds (30 cattle) tested for leptospirosis were positive. In addition, one of 28 humans tested for leptospirosis was positive.

## Tracheal mites in bees

No tracheal mites were detected in 49 consignments of queen and worker bees from the *Apis cerana* restricted area in Queensland.

## Diseases of chickens

*Pasteurella multocida* was confirmed in a flock of free-range adult chickens that had been experiencing heavy losses for some time.

Sixty birds died in a flock of 1200 six-week-old chickens (a similar problem having occurred a year previously). Post-mortem examination found ulcerative enteritis and hepatic necrosis. *Clostridia* were seen in smears but could not be cultured. Coccidia, *E. coli*, and *Pasteurella* could also be involved.

## Suspected fog fever

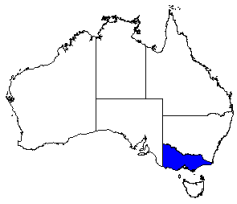
There was no evidence of infection in three lambs from a flock in which 18 animals had died suddenly with oedema, severe pulmonary congestion, haemorrhage, and emphysema. This suggested the aetiology was 3-methyl-indole toxicity associated with grazing high protein lush pastures. Fog fever (atypical interstitial pneumonia) has not previously been reported in Australia.

## Johne's disease

Five goat herds, 45 cattle herds and 27 sheep flocks were tested for Johne's disease. Seven cattle herds and one sheep flock were positive.

# Victoria

*Contributed by:*
*Tristan Jubb*
*DNRE Victoria*



## NARM

During 1999, the Victorian component of the National Antibacterial Residue Minimisation (NARM) program detected 1% of cull cattle with aminoglycoside antibacterial residues above the maximum residue limit. Action is underway to restrict the use of dihydrostreptomycin and review the adequacy of the withholding period of neomycin.

## Anthrax

Anthrax was excluded in a mob of 400 adult Merino wethers of which 80 died over a two-day period. The sheep had been introduced into a large paddock at the onset of a period of very hot weather. Most of the dead sheep were found along a fence line separating them from a creek, suggesting that their death was from dehydration.

## Sporadic bovine encephalitis

Sporadic bovine encephalitis was suspected in three six-month-old bulls on a property in north-eastern Victoria. Pyrexia, shifting lameness and nervous signs including goose-stepping gait were present. The sick animals had abnormally high titres for chlamydia but clinically normal animals in the herd were seronegative. Tetracyclines were not able to reverse the course of the disease. Serofibrinous peritonitis and pleuritis were found on post mortem examination.

## Perennial ryegrass staggers

There were numerous reports of perennial ryegrass staggers in young cattle in north-eastern Victoria. On one property, 10 six-month old calves exhibited head-nodding and ataxia. Recovery of survivors took two weeks .

## Psittacosis

Psittacosis, possibly transmitted from a pet sulphur-crested cockatoo, caused flu-like symptoms in three members of a family, one of whom entered intensive care and died from complicating factors. On necropsy, the bird had long-standing signs of chlamydial infection, including fibrinous pericarditis.

### Equine infectious anaemia

The intensity of surveillance for equine infectious anaemia (EIA) in Victoria increased markedly in the last six months of 1999. A number of leading Victorian studs tested all their resident horses, and many mares were tested before going to stud. Samples were also submitted to rule out EIA from cases of poor performance or illthrift. All samples tested in Victoria were negative.

### Equine herpesvirus

A case of equine herpesvirus 1 (EHV1) abortion in a thoroughbred mare occurred in early October. The mare and two companions were already in isolation on non-stud premises as they originated from a property in NSW where EHV1 abortion occurred earlier this year. Guidelines for control of EHV1 were followed and no other cases eventuated in the Victorian group.

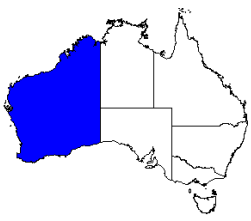
In a separate case of early respiratory disease in ten racing thoroughbreds and standardbreds, four animals were positive for EHV4 by PCR test, two of which were confirmed by viral isolation in cell culture. One other animal was positive for EHV1 by PCR test, the laboratory's first detection of EHV1 as a cause of respiratory disease in racing horses.

### Ulcerative disease

Vesicular stomatitis was ruled out in two separate incidents of unusual ulcerative disease in horses reported by private practitioners. In one case of mild respiratory disease and nasal ulceration, EHV4 was isolated. The other case was associated with severe oedema of the legs and spectacular lesions in the nares and mouth.

## Western Australia

*Contributed by:*
*Richard Norris*
*Agriculture WA*



### General

There were 611 investigations of animal disease requiring laboratory testing during the quarter. Of these, 240 were cost-recovery (private benefit) cases and 371 were charge-exempt (public benefit). Most of the investigations were for sheep (149 cases) and cattle (110 cases).

### Exotic disease alerts

Aujeszky's disease was suspected when meningo-encephalitis was seen in suckling piglets in December. However, the mortality rate (20/250) was too low for that disease and the provisional diagnosis was changed to infection with haemagglutinating encephalomyelitis virus. Confirmatory testing is being conducted.

Two blood samples from a consignment of 414 cattle destined for export to Israel tested positive in the CFT and SAT for *Brucella abortus*. However, post mortem examination of these animals and follow-up testing of all animals on the Pinjarra property failed to confirm the presence of infection.

### Notifiable diseases

Twenty-two notifiable diseases were reported. Bovine genital campylobacteriosis was reported from nine properties in a number of districts. Annual ryegrass toxicity was also reported from a number of districts, in both sheep and cattle. Listeriosis was seen in cattle at Brunswick, infectious bovine rhinotracheitis in cattle at Benger, malignant catarrhal fever in cattle at Gingin, mucosal disease in cattle at Albany, brucellosis (*Brucella ovis*) in rams at York, salmonellosis in poultry at Mt Helena, and cryptococcosis in birds at the Perth Zoological Gardens.

### Lameness in cattle

An outbreak of lameness in 120 of 600 recently transported cattle was reported in a feedlot at Kojonup. There were similarities with previous outbreaks of laminitis/polyarthritis investigated earlier in 1999 in which dual infection with pestivirus and lentivirus was thought to have caused immuno-suppression. This immune defect in combination with the stresses of saleyards, transport, a new diet, a new environment and hot weather, is thought to trigger the disease. Investigations are continuing.

**NAHIS web site**

**http://www.brs.gov.au/aphb/aha**

This newsletter is available on the NAHIS website, which provides information and statistics about animal health in Australia.

# Quarterly Disease Statistics

## Laboratory testing

The results of serological testing for a range of viral diseases from routine laboratory submissions for the quarter are shown in Table 2.

**Table 2: 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 98 | 1559 | 305 | 4976 | 397 | 957 | 163 | 3023 | 4 | 709 | 8 | 354 | 6 |
| Jan – Mar 99 | 818 | 319 | 5061 | 250 | 1542 | 377 | 241 | 1 | 505 | 1 | 299 | 7 |
| Apr – Jun 99 | 2410 | 443 | 6764 | 500 | 2092 | 348 | 1071 | 5 | 1252 | 3 | 564 | 13 |
| Jul – Sep 99 | 1526 | 248 | 2004 | 172 | 923 | 182 | 1264 | 5 | 9539 | 5 | 839 | 70 |
| Oct – Dec 99 | 1839 | 286 | 3092 | 218 | 1762 | 274 | 2665 | 8 | 1584 | 1 | 458 | 19 |
| NSW | 33 | 5 | 494 | 36 | 243 | 24 | 180 | 1 | 640 | 0 | 211 | 2 |
| NT | 292 | 104 | 562 | 91 | 463 | 124 | 149 | 7 | 8 | 0 | 0 | 0 |
| QLD | 471 | 166 | 514 | 75 | 367 | 124 | 94 | 0 | 386 | 1 | 46 | 1 |
| SA | 388 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 2 | 0 |
| TAS | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| VIC | 75 | 0 | 295 | 0 | 118 | 0 | 554 | 0 | 462 | 0 | 162 | 16 |
| WA | 580 | 11 | 1200 | 16 | 571 | 2 | 1687 | 0 | 51 | 0 | 37 | 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. Eighty-five 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 3.

**Table 3: Surveillance for bovine brucellosis**

| | Abortion Investigations | | Test for other reasons | |
|---|---|---|---|---|
| | Tests | +ve | Tests | +ve |
| Oct – Dec 98 | 127 | 0 | 3278 | 0 |
| Jan – Mar 99 | 178 | 0 | 3582 | 0 |
| Apr – Jun 99 | 86 | 0 | 835 | 0 |
| Jul – Sep 99 | 142 | 0 | 2339 | 0 |
| Oct – Dec 99 | 85 | 0 | 2648 | 0 |
| NSW | 1 | 0 | 244 | 0 |
| NT | 0 | 0 | 0 | 0 |
| QLD | 52 | 0 | 294 | 0 |
| SA | 0 | 0 | 72 | 0 |
| TAS | 2 | 0 | 26 | 0 |
| VIC | 0 | 0 | 324 | 0 |
| WA | 30 | 0 | 1688 | 0 |

### Ovine brucellosis

Accreditation programs for ovine brucellosis freedom are operating in most 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 1999**

| NSW | NT | QLD | SA | TAS | VIC | WA | AUS |
|---|---|---|---|---|---|---|---|
| 1250 | 0 | 0 | 526 | 130 | 722 | 86 | 2714 |

### Enzootic bovine leucosis

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

**Table 5: Dairy herds tested free of enzootic bovine leucosis at 31 December 1999**

| | NSW | NT | QLD | SA | TAS | VIC | WA | AUS |
|---|---|---|---|---|---|---|---|---|
| Free | 1547 | 0 | 1595 | 726 | 679 | 7983 | 455 | 12 985 |
| Herds | 1743 | 0 | 1633 | 728 | 741 | 8453 | 455 | 13 753 |

## Tuberculosis

Australia was declared a Free Area for bovine tuberculosis (TB) on 31 December 1997. This date marked the end of Brucellosis and Tuberculosis Eradication campaign (BTEC) and the start of the Tuberculosis Freedom and Assurance Program (TFAP). TFAP is a surveillance program to ensure that any resurgence of TB in Australia is promptly and effectively eliminated. The National Granuloma Submission Program is the major surveillance tool for TB. Table 6 summarises results from the Program, in which two cases of TB were detected during the year. The failure to culture or find further disease in the companion animals in one case has resulted in that case being classified as only an incident. Table 7 summaries the number of cases from the bovine tuberculosis case register over the past ten years.

**Table 6: Results of the National Granuloma Submission Program**

| | Granulomas submitted | TB +ve |
|---|---|---|
| **Oct – Dec 98** | 930 | 0 |
| **Jan – Mar 99** | 882 | 0 |
| **Apr – Jun 99** | 842 | 0 |
| **Jul – Sep 99** | 776 | 2 |
| **Oct – Dec 99** | 635 | 0 |
| **NSW** | 44 | 0 |
| **NT** | 4 | 0 |
| **QLD** | 319 | 0 |
| **SA** | 91 | 0 |
| **TAS** | 26 | 0 |
| **VIC** | 45 | 0 |
| **WA** | 106 | 0 |

**Table 7: National bovine tuberculosis case register**

| | BTEC | | | BTEC impending free | | | | | TFAP free | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Year** | **90** | **91** | **92** | **93** | **94** | **95** | **96** | **97** | **98** | **99** |
| **NSW** | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| **NT** | 2 | 1 | 2 | 7 | 5 | 5 | 3 | 4 | 2 | 1 |
| **QLD** | 5 | 6 | 4 | 1 | 2 | 1 | 1 | 2 | 2 | 0 |
| **SA** | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| **TAS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **VIC** | 0 | 2 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| **WA** | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 |
| **AUS** | 8 | 9 | 9 | 9 | 7 | 9 | 7 | 7 | 5 | 1 |

## 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 the Northern Territory, and active measures are taken to stamp-out any incursions. Table 8 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 9.

*Further information about components of the National JD Control Program can be obtained from State coordinators and AAHC's coordinators, David Kennedy 02 6365 6016 or Bruce Allworth 02 6036 9233.*

*Lists of beef, dairy, goat 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.brs.gov.au/aphb/aha/jdmap).*

**Table 8: Herds/flocks with JD at 31 December 1999**

| STATE | Cattle | Sheep | Goats | Alpacas | Total |
|---|---|---|---|---|---|
| **NSW** | 157 | 453 | 11 | 1 | 622 |
| **NT** | 0 | 0 | 0 | 0 | 0 |
| **QLD** | 0 | 0 | 0 | 0 | 0 |
| **SA** | 35 | 22 | 0 | 0 | 57 |
| **TAS** | 37 | 20 | 9 | 0 | 66 |
| **VIC** | 1878 | 39 | 9 | 11 | 1937 |
| **WA** | 0 | 0 | 0 | 0 | 0 |
| **AUS** | 2107 | 534 | 29 | 12 | 2682 |

**Table 9: Flocks with a JDMAP status of at least MN1/TN1 status at 31 December 1999**

| STATE | Cattle | Sheep | Goats | Alpacas | Total |
|---|---|---|---|---|---|
| **NSW** | 795 | 308 | 6 | 46 | 1155 |
| **NT** | 0 | 0 | 0 | 0 | 0 |
| **QLD** | 0 | 17 | 0 | 0 | 17 |
| **SA** | 63 | 215 | 1 | 23 | 302 |
| **TAS** | 3 | 24 | 0 | 0 | 27 |
| **VIC** | 42 | 113 | 0 | 7 | 162 |
| **WA** | 0 | 0 | 0 | 0 | 0 |
| **AUS** | 903 | 677 | 7 | 76 | 1663 |

# Surveillance activities

## Northern Australia Quarantine Strategy

In recognition of the special quarantine risks associated with Australia's sparsely populated northern coastline, AQIS conducts an animal disease surveillance program as an integral component of the Northern Australia Quarantine Strategy (NAQS). The NAQS surveillance program provides early warning of disease threats to livestock industries, and in some cases human health. NAQS surveillance activities include both offshore and onshore components. Table 10 summarises NAQS activity over the past five quarters.

**Table 10: Summary of recent NAQS activity**

| | Oct – Dec 98 | | Jan – Mar 99 | | Apr – Jun 99 | | Jul – Sep 99 | | Oct – Dec 99 | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Tested | +ve | Tested | +ve | Tested | +ve | Tested | +ve | Tested | +ve | |
| Aujeszky's disease | 157 | 0 | 25 | 0 | 134 | 0 | 207 | 0 | 98 | 0 | |
| Avian influenza | 321 | 0 | 21 | 0 | 80 | 0 | 0 | 0 | 0 | 0 | |
| Bee mites | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | |
| Classical swine fever | 157 | 0 | 25 | 0 | 134 | 0 | 114 | 0 | 98 | 0 | |
| Duck virus enteritis | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Infectious bursal disease | 40 | 1 | 35 | 6 | 86 | 31 | 0 | 0 | 1 | 0 | a |
| Japanese encephalitis | 745 | 0 | 414 | 0 | 255 | 13 | 76 | 0 | 71 | 0 | b |
| Newcastle disease | 322 | 0 | 20 | 0 | 80 | 1 | 0 | 0 | 0 | 0 | c |
| Old world screw-worm | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | d |
| Porcine reproductive and respiratory syndrome | 97 | 0 | 25 | 0 | 135 | 0 | 207 | 0 | 98 | 0 | |
| Surra | 340 | 0 | 148 | 0 | 338 | 0 | 249 | 0 | 196 | 0 | |
| Swine influenza | 157 | 0 | 25 | 0 | 48 | 0 | 3 | 0 | 0 | 0 | |
| Transmissible gastroenteritis | 157 | 0 | 25 | 0 | 48 | 0 | 3 | 0 | 0 | 0 | |
| Trichinellosis | 84 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Tropical canine pancytopaenia | 14 | 0 | 20 | 0 | 11 | 0 | 3 | 0 | 2 | 0 | |

### Notes

**a** Although mild infectious bursal disease (IBD) is endemic in poultry flocks and is occasionally found in wild birds, Australia is free of hypervirulent IBD virus.

**b** In 1995, 1996 and 1997, animals at sentinel sites on islands in the Torres Strait, but not the Australian mainland, seroconverted to Japanese encephalitis during the latter part of the wet season (March–April). In March 1998, seroconversions occurred at a number of sentinel sites on islands in the Torres Strait (Saibai, Badu, Moa and Mabuiag), and for the first time on the mainland, near Bamaga, at the tip of Cape York Peninsula. No seroconversion occurred in either Torres Strait or mainland sentinel herds during the 1999 wet season.

**c** These are serological positives that were detected in wild birds as part of regular wildlife monitoring in the Northern Territory. The antibody titres indicate that the birds had been exposed at some time to non-pathogenic strains of Newcastle disease virus. There was no evidence of clinical disease in the birds and no history of mortalities in wild birds or poultry in the area at the time.

**d** These figures count *ad hoc* examinations of animals with lesions consistent with screw-worm fly infestation. In addition, three screw-worm fly traps are located at each of 24 sites in coastal areas across northern Australia. These traps are inspected monthly and no screw-worm flies have been found.

## National Residue Survey

Of 4377 samples tested during the quarter for agricultural and veterinary chemicals, seven (0.16%) had residues above the maximum residue limit (MRL). Of the six pig samples with antimicrobial residues above MRL, five were for oxytetracycline (only two above the NRA-recommended MRL of 0.60 mg/kg in kidney) and one for dihydrostreptomycin. The other residue above MRL was a case of ivermectin (0.028 mg/kg) in a cattle sample. Trace-back investigation could not conclusively confirm the residue source for the ivermectin contravention as the withholding period was observed — it was concluded that the animal had been unintentionally overdosed. Table 11 summarises the results for the quarter.

Further information can be found on the internet (at http://www.nrs.gov.au)

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*GPO Box 858, Canberra, ACT 2601, phone (02) 6272 5096; fax (02) 6272 4023*
*E-mail: rusty.branford@affa.gov.au*

**Table 11: National Residue Survey, 1 October to 31 December 1999**
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 | 1 | 76 | 0 | 1 | 0 | 76 | 0 | 13 | 0 | 3 | 0 | 37 | 0 | 11 | 1 | 217 |
| pigs | 0 | 23 | 0 | 0 | 0 | 17 | 0 | 5 | 0 | 0 | 0 | 27 | 0 | 10 | 0 | 82 |
| sheep | 0 | 125 | 0 | 0 | 0 | 13 | 0 | 50 | 0 | 9 | 0 | 94 | 0 | 101 | 0 | 392 |
| other | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 12 |
| Total | 1 | 226 | 0 | 1 | 0 | 107 | 0 | 69 | 0 | 12 | 0 | 166 | 0 | 122 | 1 | 703 |
| **Antimicrobials** | | | | | | | | | | | | | | | | |
| cattle | 0 | 98 | 0 | 0 | 0 | 130 | 0 | 23 | 0 | 6 | 0 | 78 | 0 | 22 | 0 | 357 |
| pigs | 1 | 112 | 0 | 1 | 2 | 77 | 2 | 38 | 0 | 3 | 1 | 95 | 0 | 45 | 6 | 371 |
| poultry | 0 | 50 | 0 | 0 | 0 | 45 | 0 | 12 | 0 | 12 | 0 | 23 | 0 | 19 | 0 | 161 |
| sheep | 0 | 49 | 0 | 0 | 0 | 6 | 0 | 24 | 0 | 4 | 0 | 29 | 0 | 48 | 0 | 160 |
| other | 0 | 9 | 0 | 2 | 0 | 28 | 0 | 15 | 0 | 0 | 0 | 10 | 0 | 3 | 0 | 67 |
| Total | 1 | 318 | 0 | 3 | 2 | 286 | 2 | 112 | 0 | 25 | 1 | 235 | 0 | 137 | 6 | 1116 |
| **Growth promotants** | | | | | | | | | | | | | | | | |
| cattle | 0 | 135 | 0 | 1 | 0 | 176 | 0 | 33 | 0 | 14 | 0 | 88 | 0 | 43 | 0 | 490 |
| pigs | 0 | 8 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 6 | 0 | 4 | 0 | 26 |
| poultry | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 5 |
| sheep | 0 | 62 | 0 | 0 | 0 | 3 | 0 | 31 | 0 | 12 | 0 | 45 | 0 | 46 | 0 | 199 |
| other | 0 | 3 | 0 | 1 | 0 | 24 | 0 | 21 | 0 | 0 | 0 | 7 | 0 | 5 | 0 | 61 |
| Total | 0 | 209 | 0 | 2 | 0 | 208 | 0 | 89 | 0 | 26 | 0 | 147 | 0 | 100 | 0 | 781 |
| **Insecticides** | | | | | | | | | | | | | | | | |
| cattle | 0 | 152 | 0 | 8 | 0 | 181 | 0 | 33 | 0 | 14 | 0 | 115 | 0 | 28 | 0 | 531 |
| pigs | 0 | 16 | 0 | 0 | 0 | 16 | 0 | 5 | 0 | 1 | 0 | 30 | 0 | 10 | 0 | 78 |
| poultry | 0 | 10 | 0 | 0 | 0 | 8 | 0 | 2 | 0 | 2 | 0 | 4 | 0 | 2 | 0 | 28 |
| sheep | 0 | 240 | 0 | 0 | 0 | 20 | 0 | 99 | 0 | 21 | 0 | 178 | 0 | 147 | 0 | 705 |
| other | 0 | 47 | 0 | 4 | 0 | 68 | 0 | 32 | 0 | 11 | 0 | 10 | 0 | 8 | 0 | 180 |
| Total | 0 | 465 | 0 | 12 | 0 | 293 | 0 | 171 | 0 | 49 | 0 | 337 | 0 | 195 | 0 | 1522 |
| **Metals** | | | | | | | | | | | | | | | | |
| cattle | 1 | 22 | 0 | 1 | 0 | 25 | 0 | 6 | 0 | 2 | 0 | 14 | 1 | 4 | 2 | 74 |
| pigs | 1 | 6 | 0 | 0 | 3 | 12 | 0 | 5 | 0 | 1 | 0 | 7 | 0 | 8 | 4 | 39 |
| poultry | 0 | 10 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 2 | 0 | 4 | 0 | 4 | 0 | 28 |
| sheep | 1 | 26 | 0 | 0 | 0 | 1 | 1 | 12 | 0 | 1 | 3 | 21 | 4 | 20 | 9 | 81 |
| other | 0 | 0 | 0 | 2 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 9 |
| Total | 3 | 64 | 0 | 3 | 4 | 48 | 1 | 24 | 0 | 6 | 3 | 49 | 5 | 37 | 16 | 231 |
| **Miscellaneous** | | | | | | | | | | | | | | | | |
| cattle | 0 | 39 | 0 | 1 | 0 | 42 | 0 | 11 | 0 | 4 | 0 | 33 | 0 | 7 | 0 | 137 |
| sheep | 0 | 31 | 0 | 0 | 0 | 2 | 0 | 10 | 0 | 4 | 0 | 19 | 0 | 18 | 0 | 84 |
| other | 0 | 3 | 0 | 2 | 0 | 14 | 0 | 3 | 0 | 11 | 0 | 0 | 0 | 1 | 0 | 34 |
| Total | 0 | 73 | 0 | 3 | 0 | 58 | 0 | 24 | 0 | 19 | 0 | 52 | 0 | 26 | 0 | 255 |

## National TSE Surveillence Program

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

Table 12 summaries the activity of the program over the past five quarters. Except for a small number of animals for which the specimens where unsuitable for testing, all the results were negative. Information about NTSESP is available on the internet (at http://www.brs.gov.au/aphb/ntsesp).

*Contact: Chris Baldock, AAHC's NTSESP National Coordinator*

**Table 12: Results of TSE surveillance**

| | Oct – Dec 98 | | Jan – Mar 99 | | Apr – Jun 99 | | Jul – Sep 99 | | Oct – Dec 99 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Cattle | Sheep | Cattle | Sheep | Cattle | Sheep | Cattle | Sheep | Cattle | Sheep |
| **NSW** | 11 | 16 | 28 | 55 | 33 | 26 | 50 | 50 | 28 | 20 |
| **NT** | 8 | 0 | 4 | 0 | 3 | 0 | 7 | 0 | 4 | 0 |
| **QLD** | 56 | 9 | 35 | 15 | 43 | 4 | 67 | 12 | 45 | 2 |
| **SA** | 3 | 2 | 0 | 6 | 0 | 0 | 4 | 7 | 3 | 1 |
| **TAS** | 3 | 3 | 1 | 4 | 2 | 0 | 5 | 0 | 2 | 3 |
| **VIC** | 69 | 127 | 12 | 25 | 17 | 29 | 39 | 30 | 22 | 20 |
| **WA** | 6 | 17 | 1 | 20 | 12 | 19 | 18 | 27 | 11 | 15 |
| **AUS** | 156 | 174 | 81 | 125 | 110 | 78 | 190 | 126 | 115 | 61 |
| **unsuitable** | 5 | 3 | 10 | 2 | 11 | 1 | 23 | 0 | 3 | 0 |
| **Nett total** | 151 | 171 | 71 | 123 | 99 | 77 | 167 | 126 | 112 | 61 |

## Salmonella surveillance

The National Salmonella Surveillance Scheme (NSSS) is operated and maintained on behalf of the Commonwealth and States/Territories by the Microbiological Diagnostic Unit at the University of Melbourne. Data on isolates of salmonellae and other pathogens are submitted to NSSS from participating laboratories around Australia.

Quarterly newsletters and annual reports of both human and non-human isolates are published, and detailed data searches are provided on request to NSSS. Table 13 summarises *Salmonella* isolations from animals notified to NSSS for the quarter

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

**Table 13: Salmonella notifications, 1 October to 31 December 1999**

| Serovars | avian | bovine | canine | equine | feline | ovine | porcine | other | Total |
|---|---|---|---|---|---|---|---|---|---|
| ***S. bovismorbificans*** | 0 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 8 |
| ***S. dublin*** | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| ***S. infantis*** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ***S. typhimurium*** | 7 | 47 | 1 | 13 | 1 | 4 | 2 | 1 | 76 |
| **Other** | 8 | 18 | 2 | 8 | 0 | 3 | 1 | 24 | 64 |
| **Total** | 15 | 99 | 4 | 22 | 1 | 7 | 3 | 25 | 176 |

## Zoonoses

The National Notifiable Diseases Surveillance System of the Communicable Diseases Network Australia New Zealand collects statistics about many human diseases. *Communicable Diseases Intelligence* (CDI) is accessible on the internet (at http://www.health.gov.au/pubhlth/cdi/cdihtml.htm). Table 14 summarises information for important zoonoses.

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

**Table 14: Notifications of zoonotic diseases in humans**

| Disease | Q4-98 | Q1-99 | Q2-99 | Q3-99 | Q4-99 | Current quarter | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Australia | | | | AUST | ACT | NSW | NT | QLD | SA | TAS | VIC | WA |
| **Brucellosis** | 14 | 5 | 9 | 21 | 68 | 0 | 1 | 0 | 63 | 0 | 0 | 4 | 0 |
| **Hydatidosis** | 13 | 6 | 12 | 7 | 46 | 0 | 0 | 0 | 7 | 3 | 1 | 32 | 3 |
| **Leptospiros** | 68 | 99 | 149 | 36 | 401 | 0 | 75 | 1 | 261 | 3 | 2 | 45 | 14 |
| **Listeriosis** | 15 | 14 | 11 | 22 | 76 | 0 | 26 | 0 | 13 | 4 | 2 | 18 | 13 |
| **Ornithosis** | 28 | 17 | 29 | 18 | 114 | 0 | 2 | 0 | 0 | 9 | 2 | 96 | 5 |
| **Q fever** | 148 | 128 | 128 | 112 | 656 | 0 | 228 | 0 | 356 | 12 | 0 | 43 | 17 |

## Suspect exotic disease investigations

There were 23 investigations into suspect exotic diseases reported during the quarter, plus another eight from the previous quarter, as shown in Table 15.

**Table 15 Exotic disease investigations reported during 1 October to 31 December 1999**

| Disease | Species | Date | State | Response (key below) | Finding |
|---|---|---|---|---|---|
| Asian bee mites | apine | 12-1999 | QLD | 5 | Varroa mites on Asian honey bees |
| Aujeszky's disease | porcine | 12-1999 | WA | 3 | negative |
| Aujeszky's disease | porcine | 11-1999 | WA | 3 | negative |
| Australian bat lyssavirus | other | 11-1999 | WA | 2 | negative |
| Australian bat lyssavirus | other | 11-1999 | WA | 2 | negative |
| Australian bat lyssavirus | other | 9-1999 | WA | 3 | negative |
| Australian bat lyssavirus | other | 9-1999 | WA | 3 | negative |
| Australian bat lyssavirus | other | 9-1999 | WA | 3 | negative |
| Australian bat lyssavirus | other | 8-1999 | WA | 3 | negative |
| Bovine spongiform encephalopathy | bovine | 10-1999 | WA | 2 | negative |
| Bovine spongiform encephalopathy | ovine | 8-1999 | WA | 2 | negative |
| Bovine spongiform encephalopathy | bovine | 7-1999 | WA | 3 | negative |
| Contagious bovine pleuropneumonia | bovine | 11-1999 | SA | 3 | pasteurella |
| Equine influenza (virus type A) | equine | 12-1999 | VIC | 2 | negative |
| Foot-and-mouth disease | bovine | 11-1999 | VIC | 2 | bovine viral diarrhoea |
| Foot-and-mouth disease | bovine | 10-1999 | NSW | 3 | mucosal disease |
| Foot-and-mouth disease | bovine | 11-1999 | QLD | 1 | calf dietary problems |
| Fowl plague | avian | 11-1999 | SA | 3 | vitamin E deficiency |
| Infectious haematopoietic necrosis | piscine | 11-1999 | TAS | 3 | *Yersinia* |
| Newcastle disease | avian | 12-1999 | WA | 2 | negative |
| Newcastle disease | avian | 9-1999 | WA | 2 | negative |
| Newcastle disease | avian | 7-1999 | WA | 2 | negative |
| Newcastle disease | avian | 11-1999 | NSW | 3 | non-suppurative meningo-encephalitis |
| Newcastle disease | avian | 11-1999 | QLD | 2 | Marek's disease |
| Rabies | canine | 12-1999 | VIC | 2 | negative |
| Rabies | canine | 12-1999 | NSW | 3 | lead poisoning |
| Screw-worm fly | bovine | 10-1999 | QLD | 1 | non-SWF myiasis |
| Screw-worm fly | bovine | 12-1999 | QLD | 2 | *Chrysomya saffranea* |
| Sheep scab | other | 10-1999 | NSW | 2 | chorioptic mange |

**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) is on the internet (at **http://www.brs.gov.au/aphb/aha)**. NAHIS collects summaries of animal health information from many sources. Because NAHIS does not duplicate the data in those systems, the relevant person below should be contacted if further details are required.

| Name | Role | Phone | Fax | e-mail |
|---|---|---|---|---|
| Chris **Baldock** | National NAHIS Coordinator | 07 3255 1712 | 07 3844 5501 | ausvet@eis.net.au |
| David **Banks** | Northern Australia Quarantine Strategy | 02 6272 5444 | 02 6272 3399 | David.Banks@aqis.gov.au |
| Janet **Berry** | Qld State Coordinator | 07 4658 4414 | 07 4658 4433 | BerryJ@dpi.qld.gov.au |
| Chris **Bunn** | Emergency Disease Preparedness, AFFA | 02 6272 5540 | 02 6272 3372 | Chris.Bunn@affa.gov.au |
| Kim **Critchley** | SA State Coordinator | 08 8207 7908 | 08 8207 7852 | critchley.kim@saugov.sa.gov.au |
| John **Elliott** | Tas. State Coordinator | 03 6336 5334 | 03 6336 5374 | John.Elliott@dpiwe.tas.gov.au |
| Graeme **Garner** | Commonwealth NAHIS Coordinator | 02 6272 5369 | 02 6272 4533 | Graeme.Garner@affa.gov.au |
| Ana **Herceg** | Communicable Diseases Intelligence | 02 6289 1555 | 02 6289 7791 | http://www.health.gov.au |
| Ann **Holden** | National Granuloma Submission Program | 02 6271 6676 | 02 6272 5442 | Ann.Holden@aqis.gov.au |
| Tristan **Jubb** | Vic. State Coordinator | 03 5430 4545 | 03 5430 4520 | tristan.jubb@nre.vic.gov.au |
| David **Kennedy** | Ovine Johne's Disease Coordinator | 02 6365 6016 | 02 6365 6088 | ausvetdk@netwit.net.au |
| Diane **Lightfoot** | National Salmonella Surveillance Scheme | 03 9344 5701 | 03 9344 7833 | d.lightfoot@ microbiology.unimelb.edu.au |
| Geoff **Neumann** | CEO AAHC | 02 6232 5522 | 02 6232 5511 | aahc@aahc.com.au |
| Richard **Norris** | WA State Coordinator | 08 9368 3637 | 08 9367 6248 | rnorris@agric.wa.gov.au |
| Melanie **O'Flynn** | National Residue Survey | 02 6272 4549 | 02 6272 4023 | Melanie.Oflynn@affa.gov.au |
| Diana **Pinch** | NT Coordinator | 08 8999 2354 | 08 8999 2024 | diana.pinch@dpif.nt.gov.au |
| Evan **Sergeant** | NSW State Coordinator | 02 6391 3687 | 02 6361 9976 | Evan.Sergeant@agric.nsw.gov.au |
| Peter **Thornber** | International Coordination, AFFA | 02 6271 6343 | 02 6272 5697 | Peter.Thornber@affa.gov.au |

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