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

Volume 2 Issue 2
Quarterly Report for 1 April to 30 June 1997

Preface

This issue of the Animal Health Surveillance Quarterly leads with an article on the activities of the Australian Animal Health Council Limited during the past year.

As part of Australia's exotic disease preparedness, a joint Australia–Malaysia screw-worm fly laboratory has recently opened. There is an article on this, as well as highlights of disease surveillance activities, and items of interest from the States and Territories.

This issue also summarises the findings of disease surveillance and monitoring activities reported to the National Animal Health Information System (NAHIS) for the period from 1 April to 30 June 1997. 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.

This newsletter is available on the internet through the NAHIS worldwide web site. I commend this report as a reference document and am sure that you will find it useful.

GARDNER MURRAY
Australian Chief Veterinary Officer

AAHC completes year with programs actively operating

The Australian Animal Health Council Limited (AAHC) has completed its first full year of operations with many 'runs on the board' in relation to national animal health programs. As examples, this article considers ways in which Australia's animal health quality status and emergency preparedness has been boosted further by formal evaluation and new strategic planning for three core national programs:

- Animal Disease Preparedness (ADP);
- Endemic Disease Management (EDM); and
- Animal Health Services (AHS).

Animal Disease Preparedness Program

Following extensive analysis and detailed reporting with firm recommendations by a special Task Group, the AAHC Board appointed a part-time ADP National Coordinator, Dr Geoff Neumann, formerly Chief Veterinary Officer for South Australia. Under his leadership, the program has achieved several important outcomes:

- key areas needing priority attention have been identified and relationships developed with cooperating agencies;
- arrangements have been finalised for managing the Animal Disease Watch Hotline in future;
- consultants have been commissioned to evaluate awareness needs, including a national survey of existing awareness, and to provide guidance for future awareness programs; and

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- other consultants have been tasked to provide direction, and draft curricula, for implementing competency-based training programs for all people involved in emergency animal disease responses.

As well, AAHC contracted the Commonwealth Department of Primary Industries and Energy to maintain and develop the Australian Veterinary Emergency Plan (AUSVETPLAN) by 30 June 1998. As part of this work, the plan will be extended to cover 25 diseases.

Dr Neumann convened an Information Management Workshop in Adelaide in July to build agreement on a national emergency information system to supersede ANEMIS, which had never been evaluated in non-emergency or endemic disease situations, during simulation exercises or in real emergencies.

The ADP Task Group also identified several major problems with existing funding arrangements for handling emergency disease outbreaks. Responding to this need, AAHC has commissioned a study to develop an analytical and objective decision-support model for how costs should be shared.

Endemic Disease Management

AAHC established an EDM Task Group, with a special Johne's Disease (JD) Sub-Task Group, to examine endemic disease problems that warrant concerted national attention, particularly in regard to their effect on trade. Of a range of recommendations made by the EDM Task Group and accepted by AAHC, the most important related to the support of the recommendations of its JD Sub-Task Group.

The JD Sub-Task Group recommended a range of possible actions to control and/or eradicate the disease — but only after specific studies had been completed, including a cost-benefit analysis of control and/or eradication options. AAHC commissioned the Australian Bureau of Agricultural and Resource Economics (ABARE) to undertake that study. ABARE completed an interim report in July this year and is now working on its final report. Other studies relate to how the disease spreads (including whether or not there can be cross-infection between cattle and sheep), how long the bacteria survive in different environments, and whether or not diagnostic tests can be improved.

appointed the National Johne's Program Coordinator, Dr David Kennedy. An assistant national coordinator, Dr Bruce Allworth, was appointed in July 1997. The National JD Industry Liaison Committee (NJDILC) was established, with Dr Bill Gee as chair. Dr Gee chaired the previous NFF Coordinating Committee. At its July meeting, the NJDILC recommended to the AAHC Board that a national program to eradicate ovine JD from Australia be implemented with financial contributions coming from the livestock industries and governments.

The National JD Market Assurance Program for cattle (NJDMAP) had been set up in May 1996. By the end of 1997, about 250 herds had been assessed. Most were in New South Wales, where Cattle Compensation Funds subsidised first-round testing. In April 1997, auditing of the program began, and the first annual program review was held in late July. About 500 infected cattle herds began agreed control and testing programs in Victoria in 1996 with funding from the Victorian Cattle Compensation Fund, and herds were also assisted to control the disease in South Australia with similar funds.

The equivalent program for sheep, the Australian Sheep JD Market Assurance Program was launched in May following training of 'approved' veterinarians the month before. Testing flocks began in June. Assurance programs for goats and alpacas will be completed shortly. In Victoria, 33 infected sheep flocks were depopulated in early 1997 with compensation supported by the State Government and raised by a new sheep industry disease control fund. In Tasmania, seven flocks were identified as infected on Flinders Island, but no infection has been found in the rest of the State. Ovine JD has not been detected in any other State or Territory.

This year, the national Veterinary Committee endorsed Australian Standard Diagnostic Techniques for JD. Improved tests for differentiating ovine and bovine strains of the bacteria and methods for culturing ovine strains were developed. Livestock industry research and development corporations committed more than $0.5 million in 1996–97 and 1997–98.

Standard Definitions and Rules for the control of bovine JD were endorsed earlier this year, and zoning and compatible movement requirements are being implemented. Governments and sheep industry peak councils are currently considering similar rules for ovine JD.

AAHC is undertaking a round of formal meetings with livestock industries affected by JD and with the Commonwealth Government and State/Territory governments in an attempt to broker national funding for control and/or eradication programs. As this issue of AHSQ goes to press, AAHC and the Agricultural and Resource Management Council of Australia and New Zealand (ARMCANZ) have just resolved to attempt national eradication of ovine JD. Details of the program will be finalised within a couple of months.

Animal Health Services

The AHS Task Group provided AAHC with advice in its key areas of strategic policy development and defined the requirements for optimum operational performance in Australia's animal health services.

The AAHC Board considered the AHS Task Group report over several months and decided to develop a new national animal health strategic plan. It commissioned an Implementation by the end of October 1997. The draft plan will be refined at a workshop of AAHC Members in November, with the final plan being submitted to ARMCANZ, the peak Ministerial-level body, and to the livestock industries in February 1998.

Acting on another AHS Task Group recommendation, AAHC commissioned a National Animal Disease Surveillance Task Group to develop a national surveillance strategy to meet national and international requirements for quality information on Australia's animal health status. Chaired by Dr Helen Scott-Orr of NSW Agriculture, this Task Group is due to report by the end of August 1997.

Contributed by: Paul Crew,
Chief Executive Officer,
Australian Animal Health Council Limited

Ovine Johne's disease eradication

As mentioned above, agreement has just been reached by the NSW Sheep Industry Steering Committee, the National JD Industry Liaison Committee, AAHC and ARMCANZ (the meeting of State and Commonwealth Ministers with agricultural responsibilities) to proceed with a national program for control and progressive eradication of ovine JD.

The program is planned to commence by December 1997, subject to negotiation of suitable funding arrangements. Funding will be based on joint government and industry contributions, with details to be negotiated by AAHC. Participation in the program will be voluntary, with compensation available for producers completing approved eradication programs.

National Johne's Disease Market Assurance Program

NJDMAP was launched in May 1996 after calls from the Australian cattle industry for a national scheme to register herds tested negative for JD. The program is voluntary and largely at cost to participating herd owners. It therefore eventually has to be driven by market demand for low risk stock. Most of the early entrants, are in NSW where a subsidy on testing costs has been paid from producers' Cattle Compensation Funds. National subsidies for early adoption are being considered at present.

On farm, the program is operated under the supervision of an approved veterinarian. Testing is undertaken at 1–2-year intervals on cattle over two years old. The whole herd is tested on a large sample to give a 95% probability of detecting the disease at a 2% prevalence. Testing comprises screening by absorbed enzyme-linked immuno-sorbent assay (ELISA), with follow-up of reactors by faecal culture, or by post mortem examination in herds with a history of infection. To date, infection has been found in only two herds — in single introduced cattle on both occasions.

Volume 1, issue 2, of AHSQ contains more information on the market assurance program.

RCD Update

Rabbit calicivirus disease (RCD) is now in all States and Territories, and is estimated to have spread over about 70% of the range of rabbits. RCD-inoculated rabbits have been released at more than 400 sites around Australia. A two-year RCD Monitoring and Surveillance Program has been set up to monitor the effectiveness of RCD as a control agent of rabbits. There are 10 intensive sites at which changes in rabbit populations, disease prevalence, flora, fauna, predators and vegetation are being monitored. There are another 54 sites where there is less intensive assessment of RCD activity and rabbit abundance. The effectiveness of releases of RCD has been variable. There has been an obvious decrease in rabbit numbers at about 25% of the release sites, but no obvious decrease at a further 50% of sites. The results from the other sites are still being assessed.

During the quarter, a third outbreak of RCD was reported at Oraparinna/Gum Creek site in the Flinders ranges. This is the first site where RCD appears to have established, with recurrent outbreaks now occurring. Both RCD and myxomatosis are active at this site.

Source: Mary Bomford,
National RCD Monitoring and Surveillance Program,

NAHIS web site

The list of diseases in NAHIS includes all OIE diseases and any disease that is notifiable in any State or Territory of Australia. A paragraph has been written briefly describing each disease. The addition of more detailed descriptive information by re-using information prepared for other purposes is continuing. For example, an analysis of the risk of salmonid diseases prepared by Bureau of Resources Sciences for AQIS was used to obtain information on 24 diseases. More detailed descriptions of important endemic diseases are in the final stages of preparation.

It is always difficult to obtain precise statistics about access to web pages. However during the past quarter about 1300 people from 49 countries visited the NAHIS web site and looked at 5400 pages. Although 900 visitors looked at only one or two pages, more than 80 visitors looked at 10 or more pages on the site.

Re-organisation of the web site made the second '/brs' in the NAHIS web site address unnecessary. Just use http://www.brs.gov.au/aphb/aha .

Contributed: Rob Cannon
Bureau of Resource Sciences

Brucella suis in Australia

Since this article was published, further information about the testing has been obtained. This electronic version has been modified with corrections to the original document shown in blue.

Brucellosis in pigs (contagious abortion of swine) is due to infection with the bacterium *Brucella suis*. As well as causing abortion, it affects the male reproductive organs and can also affect other organs, especially bones and joints. *Br. suis* primarily affects pigs, but can transiently affect other species such as cattle and humans. In humans, infection with *Br. suis* can produce a similar condition to undulant fever (due to *Br. abortus*). An extensive campaign eradicated *Br. abortus* from Australia, with the last detections being in Queensland in 1991. In 1996, a brucella reactor found during serological surveillance testing of cattle in Queensland was due to *Br. suis.*

Occurrence in Australia

Porcine brucellosis is a notifiable disease in Australia. Historically, it has occurred only in NSW, Queensland and Victoria. The disease is now uncommon and is believed to be confined to Queensland. Movement restrictions and testing are

Table 1: Summary of results of *Br. suis* testing in domestic pigs 1991–96

	1991		1992		1993		1994		1995		1996		Total
	+ve	total	+ve	total	+ve	total	+ve	total	+ve	total	+ve	total	tested
NSW	0	0	0	0	0	6	0	70	0	155	0	0	231
NT	0	0	0	0	0	0	0	0	0	1	0	0	1
QLD	1	2281	0	3424	0	2289	0	5805	0	1702	0	1978	17479
SA	0	0	0	0	0	0	0	0	0	0	0	0	0
TAS	0	17	0	105	0	0	0	0	0	1	0	0	123
VIC	0	0	0	0	0	0	0	0	0	4	0	25	29
WA	0	8	0	28	0	166	0	530	0	1361	0	0	2093
AUST	1	2306	0	3557	0	2461	0	6405	0	3224	0	2003	19956

required before pigs can be moved from infected areas to free States or Territories.

In Australia, *Br. suis* is primarily associated with feral pigs. A survey between 1978 and 1981 found a seropositive rate of 2% in a sample of 1109 feral pigs from southern Queensland. Feral pigs were associated with outbreaks in Queensland in the late 1970s, and where the disease occurs in feral pigs they are considered a risk to domestic pigs. Despite this potential risk, *Br. suis* is rare in domestic pigs. In a 1981 study, all sera from 4709 backfatters slaughtered in southern Queensland were serologically negative.

Results of laboratory testing for *Br. suis* in domestic pigs for 1991–96 are shown in Table 1. Between 1991 and 1996, about 20 000 domestic pigs were tested for *Br. suis* throughout Australia. Only 15 seropositives were found. In further investigations, 14 of these 15 samples were retested and gave negatives results.The remaining sample had been collected at an abattoir and was not subject to a confirmatory test.

Human cases of brucellosis

In Australia, brucellosis is rare in both people and domestic pigs, and has a limited distribution. However, recent reports suggest that it is being detected in increasing numbers of people with occupational exposure to feral pigs, such as meat industry workers and hunters. Table 2 shows notifications of human cases of brucellosis in Australia from 1991 to 1996.

Conclusion

In Australia, porcine brucellosis is primarily associated with feral pigs. It has a limited distribution within the tropical and northern temperate zones, with recent cases being confined to Queensland. Although domestic pigs are rarely affected, the disease does represent a risk to those handling feral pigs such as hunters and meat workers.

Contributed by: Graeme Garner,Animal and Plant Health Branch,Bureau of Resource Sciences

Table 2: Notifications of human cases of brucellosis by State/Territory 1991–96

	1991	1992	1993	1994	1995	1996	Total
NSW	2	2	6	4	1	1	16
NT	0	0	0	0	0	0	0
QLD	24	25	14	27	23	34	147
SA	0	0	0	0	0	0	0
TAS	0	0	0	0	0	0	0
VIC	2	2	0	3	5	4	16
WA	0	0	0	0	0	1	1
AUST	28	29	20	34	29	40	180

Source: *Communicable Disease Network of Australia and New Zealand — National Notifiable Diseases Surveillance System.*

Screw-worm Fly Laboratory

On 28 April, by the Malaysian Minister for Agriculture officially opened a DPIE-funded screw-worm fly (SWF) laboratory at the Institut Haiwan, Kluang, Johor State, Malaysia.

Results of research to be conducted at the laboratory will bring mutual benefits to Malaysia and Australia. The Malaysian Government hopes to be able to eliminate the SWF menace from its country and perhaps the region, and Australia will benefit in terms of its disease preparedness. It is hoped that the laboratory will become a centre of excellence for SWF research and control for the South-East Asian region

The Australia–Malaysia cooperative SWF research and control project is the result of a 'memorandum of understanding' (MOU) signed with the Government of Malaysia in November 1995 for a three-year collaborative research and development project. The opening marked a significant milestone in the $3.6 million Australian government-funded contract for the construction of a pilot facility in Malaysia. In addition, external research funding of $2.275 million is being provided by the Australian Meat Research Corporation, the Dairy Research and Development Corporation, the Australian Wool Research and Promotion Organisation, and the Exotic Animal Disease Preparedness Consultative Council.

Australia began work to develop the sterile insect technology against SWF during the 1970s, and CSIRO operated a SWF laboratory in Papua New Guinea until 1991. The MOU was a result of Australia's decision in 1990 to review its long-term planning for responding to the threat to the livestock industry of SWF, a parasite of warm-blooded animals. A major element of that plan was a research program to validate the sterile insect release method (SIRM) for the Old World SWF and to develop new process engineering systems for mass rearing and sterilisation.

This project in Malaysia will determine if SIRM is effective against the Old World SWF. SIRM has been spectacularly successful against the New World SWF of the Americas. New World SWF has been pushed out of the United States and Mexico, and well down Central America. The United States Department of Agriculture plans to eradicate New World SWF down through Panama by about the year 2000, and then hold it with a barrier between the Panama Canal and South America.

SIRM is the foundation of the AUSVETPLAN strategy for SWF. The objective if SWF enters Australia is to eradicate it — and SIRM is the only known technology with the potential for eradication. SIRM technology is also being used for Queensland fruit fly in Australia, and is to be applied against papaya fruit fly when a sterile papaya fruit fly unit to be built near Cairns is completed next year.

Old World SWF is a serious threat to Australia. It is widely distributed throughout South-East Asia, including the Philippines, Indonesia and Papua New Guinea.. Most injuries result from SWF maggots when prompt detection and treatment are not feasible under local management conditions. Infestation of the navel cause severe illness in calves, often leading to death. SWF is a major limitation on large-scale livestock production in affected countries because animals have to be regularly inspected and infested animals need to be treated every 2–3 days.

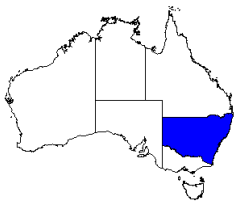
Although strikes on humans are not a serious problem in Malaysia, in less developed parts of South-East Asia and Africa SWF can be a tragic public health problem. In 1996, a new incursion of Old World in Iraq spread quickly into eight provinces and infested more than 16 000 cattle and 20 humans within a few months.

Modelling of SWF developed by the Queensland Department of Primary Industries as part of Australia's SWF preparedness strategy suggests that the annual direct cost to producers in Australia in an average year would be about $280 million. The flow-on cost to the community increases this to more than $350 million a year. The model also assesses the benefit–cost ratios of a number of levels of preparedness, and identifies that the best options all include a high degree of readiness to implement a SIRM campaign.

Contributed by: Neil Tweddle,
Animal Disease/Incidents Section,
Livestock and Pastoral Division,
Commonwealth Department of Primary Industries and Energy

State and Territory Reports

New South Wales



Contributed by:
Evan Sergeant
NSW Agriculture

District Veterinarians and private practitioners in NSW regularly visit farms and carry out investigations into a wide range of disease conditions. The results of many of these investigations are now captured through either the field or laboratory information management systems (Fieldvet and Labsys). The Fieldvet system has now been installed for all 40 current District Veterinarians employed by Rural Lands Protection Boards across NSW.

Disease diagnoses of interest that were recorded during the quarter include:

- several cases of illthrift and anaemia in young merino sheep associated with *Eperythrozoon ovis* infection;
- respiratory disease due to infectious bovine rhinotracheitis virus in feedlot cattle;
- several cases of mannosidosis and malignant catarrhal fever, and one case of St George disease in cattle;
- Ross River Fever in a horse at Wagga Wagga;
- suspected listeriosis, suspected as the cause of meningoencephalitis in a Boer goat with nervous signs and abortion in a Saanen goat herd; and
- one case of avian tuberculosis in a domestic poultry flock.

Diarrhoea and deaths

Salmonella typhimurium was isolated from a number of cases of diarrhoea and death in cattle, a single case of diarrhoea in pigs, and deaths in sheep. Several cases of diarrhoea and death in calves and one adult cow were associated with *Salmonella dublin* infection. *Yersinia entero-colitica* was also isolated from several cows with diarrhoea (one of which was also serologically positive for JD) and *Y. pseudotuberculosis* was associated with severe diarrhoea in a group of merino weaners. A number of cases of scouring and deaths in cattle due to persistent pestivirus infection were also diagnosed. Dysentery due to infection with *Serpulina hyodysenteriae* was diagnosed in one pig herd.

Anthrax

One case of anthrax was diagnosed during the quarter, affecting cattle in the Nyngan Rural Lands Protection District. This case was dealt with according to existing policy, and rapidly and effectively controlled. The case brings the total number of anthrax cases in NSW for the first half of 1997 to five. Anthrax was excluded as the cause of death in 15 other laboratory investigations during the quarter, making a total of 40 anthrax exclusions for the first half of 1997.

Ephemeral fever

Cases of bovine ephemeral fever reported last quarter continued to occur in the north west and north coast areas through April and into early May, with one case in early June in the Gloucester area.

Reproductive failure

A number of infertility investigations were carried out in cattle, with bovine venereal campylobacteriosis being the most common finding. Leptospirosis due to *L. hardjo* was also suspected in several cases of infertility and abortions, and infection with *Neospora* sp. was thought to be the cause of single abortions on a number of farms. Pestivirus infection was also suspected as the cause of poor reproductive performance in one cattle herd, and porcine parvovirus infection was diagnosed as the cause of infertility in a piggery.

Transmissible spongiform encephalopathy surveillance

Pathologists at all NSW Agriculture veterinary laboratories have now received formal training in the diagnosis of transmissible spongiform encephalopathies (TSEs), and routine screening of submissions of brain tissue from cases of neurological disease has commenced.

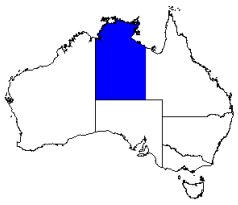
During the quarter, there 10 brains were examined for evidence of TSE — nine from sheep and one from cattle. Eight sheep brains and the one cattle brain were negative for TSE. For one sheep brain

brain were negative for TSE. For one sheep brain the examination was inconclusive, due to the autolysed nature of the tissues submitted.

Bat paramyxovirus

Bat paramyxovirus (formerly called equine morbillivirus) has now been isolated from a fruit bat in NSW. The virus was isolated from tissues submitted in October 1996 from a neonatal grey-headed fruit bat from a bat colony in the Sydney area. Although serological evidence of infection has previously been found, this is the first time the virus has been isolated in NSW. About 80 bats have now been tested for this virus in NSW, with only one serological reactor and one infected

Northern Territory



Contributed by:
Diana Pinch
NT DPIF

Cattle

Bovine ephemeral fever continued to be reported from the Alice Springs area at the start of the quarter — evidence of a more southerly distribution than usual.

Poisoning from morning glory (convolvulus, *Ipomoea muelleri*) was diagnosed in cattle from the Tennant Creek region. Goose-stepping was seen in affected animals, and the cattle had to be removed from the paddock.

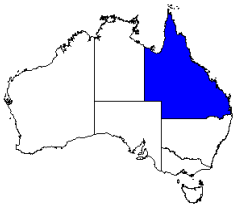
Two cases of tuberculosis (TB) were found at abattoir inspection during the quarter. One case, was in an old cow in a culled mob of about 1400, from the Tennant Creek region, and belonged to progeny of mobs that broke down with TB in the late 1980s. More than 1700 animals were destocked without evidence of further cases, and testing on the rest of the property has not identified any TB. The other case of TB was found in an animal rejected from live export for eye problems, and sent to slaughter. It originated from the Alice Springs area, from a property that has not had TB detected since 1982. The property is to undergo destocking and testing.

Bush destocking of feral cattle and buffalo in Kakadu National Park as part of the Brucellosis and Tuberculosis Eradication Campaign has now

Sentinel poultry

During the quarter, sentinel poultry flocks between Darwin and Alice Springs showed seroconversion to Murray Valley encephalitis. This showed that viral activity was more widespread than usual, and public health awareness warnings were broadcast by the Territory Health Services during May.

Queensland



Contributed by:
Peter Black
Queensland DPI

Tick fevers

Babesiosis was diagnosed in more than 45 beef and dairy herds this quarter. All cases except one were in unvaccinated stock, and most were reported in the south-east region of the State. Anaplasmosis was also confirmed in a number of herds this quarter. One case involved the death of 30 animals which were being checked before entry into a large feedlot in central Queensland.

Clostridial diseases

Blackleg was diagnosed on a number of properties in the Banana and Mundubbera shires. In one case, nine weaners in a group of 90 died, and in another case 20 animals died. Publicity was subsequently generated to remind producers about vaccination options and procedures.

Botulism was suspected as the cause of death of 50 heifers in the Gayndah Shire, although the diagnosis was not confirmed by the laboratory. (Laboratory confirmation of botulism is very difficult.)

Bovine ephemeral fever

Clinical cases were reported during April and May in most regions except west of the Great Dividing Range in southern Queensland.

Pestivirus

Infection was confirmed as a cause of diarrhoea and ill thrift in at least 10 herds this quarter. The Department has attempted to increase awareness among veterinarians and producers of the clinical expression of disease in persistently infected animals and the potential for reproductive loss within herds. It is anticipated that this increased awareness will lead to an *apparent* increase in the incidence of this disease in Queensland cattle herds in the future.

A case currently being intensively investigated involves a breeder herd of 800 crossbred cows in the central Queensland area. About 20% of cows pregnancy tested in-calf last year failed to rear a calf, and sick calves and abortions have been noted. In the current weaner group of about 570 head, there were about 100 stunted animals, with some showing signs of malformations such as eye deformities and dwarfism. Two calves that were poorly grown and had chronic scouring were euthanased. Post mortem examination revealed small ulcers in the mouth and oesophagus, suggestive of mucosal disease. The calves tested positive for mucosal disease virus by the antigen-capture ELISA. Eleven other poor or scouring calves were sampled and were virus-positive. Based on the history and clinical signs, it is thought that infection was introduced into this naive herd about two years ago.

Respiratory disease

Over several weeks, 200 steers died in a group of 2000 in a large feedlot in southern Queensland. Typical clinical signs associated with respiratory disease — including fever, lethargy and respiratory distress — were noted. *Pasteurella haemolytica* was isolated from lung tissue from a number of animals at post mortem examination.

Plant poisonings

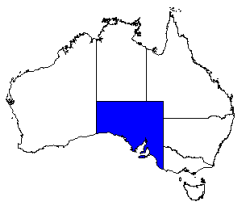
In north Queensland, lantana poisoning caused the death of nine mature, brahman cattle in poor condition. The mob of 120 head had been moved from a property in the Hughenden area to Cardwell on agistment. Clinical signs included evidence of photosensitisation, including peeling of skin in exposed areas. In addition, 70 cattle were affected by pimelea poisoning in the Cunnumulla area. Two affected animals died, but the rest recovered once they were moved to another paddock.

Strangles was diagnosed in five sick horses with fever and abscess formation in a group of 30 thoroughbreds in southern Queensland. *Streptococcus equi* was isolated.

Erysipelas

A large outbreak of erysipelas was diagnosed in a 1500-sow piggery in southern Queensland. Despite vaccination, pigs from eight weeks to breeding age developed typical clinical signs of *Erysipelothrix rhusipathiae* infection — abortions, acute deaths, fever and skin lesions were all observed. About 60–70 sows were affected, and 15–20 new cases occurred daily in weaner to finisher pigs. *E. rhusipathiae* was isolated from diamond-skin lesions and serotyped as 1A by the Elizabeth MacArthur Agricultural Institute in NSW.

South Australia



Contributed by:
Kim Critchley
Primary Industries SA

Laboratory services

June 30 was the last day that VETLAB, South Australia's State Government Veterinary Laboratory, operated with public service staff. The service has been contracted to Veterinary Pathology Services, although for production animal diagnosis and testing services related to disease control it will still be known as VETLAB.

Veterinary accreditation programs

Twenty eight people undertook the final examination for the Core Module of the veterinary accreditation program. Ovine JD, JDMAP and enzootic bovine leucosis (EBL) programs were also conducted.

NAHIS web site

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

This newsletter is available on the NAHIS website which is being developed to provide information and statistics about animal health matters in Australia.

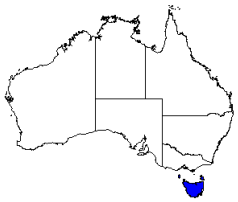
Sheep lice task force

The report of a Sheep Lice Task Force established in 1996 was sent to the Minister during the quarter and is expected to be released soon. The Task Force was asked to provide solutions to the problem of the perceived heavy lice burden in the South Australian sheep flock, the effects of chemical treatments and how funds might be raised to address these issues.

Enzootic bovine leucosis

Six consecutive quarterly bulk milk tests of the South Australian dairy herd have now been completed without detection of any new herds positive for EBL.

Tasmania



Contributed by:
John Elliot
DPIF, Tasmania

Bovine hydatids

Tasmania is provisionally free of hydatidosis and to maintain this status all cases of hydatids are traced, if possible. During this quarter, non-viable cysts were detected in an old dairy cow. This animal was traced to a property next to another property on which hydatids had occurred for many years, until it was eliminated two years ago.

Aquatic animal diseases

An investigation of ulcers on farmed salmon and wild-caught flounder ruled out *Aeromonas salmonicida*.

A previously unreported sporozoan intracellular parasite was found in apparently healthy juvenile abalone.

Marked chronic myxosporidian encephalitis was seen in a striped trumpeter with weight loss and neurological signs. The parasite is likely to be a previously undescribed species. Striped trumpeter are likely to be a species suitable for aquaculture, and a disease such as this could affect the development of this industry.

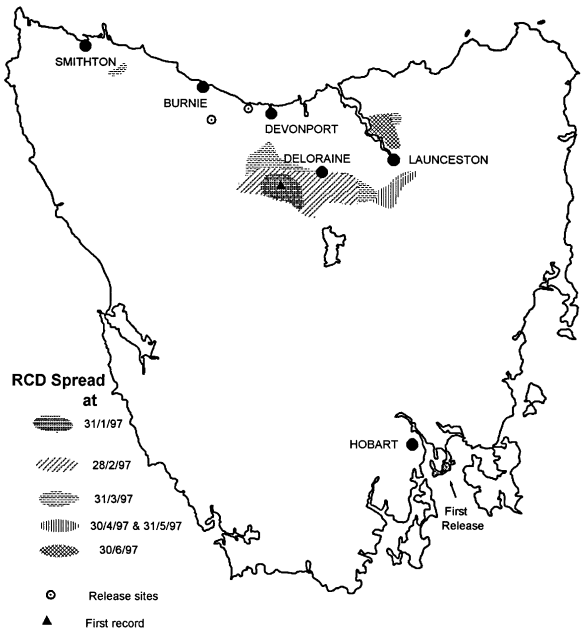
New species of lice

Haematopinus tuberculatus (the buffalo louse) was found on a shipment of water buffalo imported from Victoria and NSW. This species is thought not to be present in southern Australia, and the affected buffalo were quarantined and treated.

Rabbit calicivirus disease

Spread of RCD to Tasmania was reported in the previous quarter. Changes in its distribution during this quarter are summarised in Figure 1.

Figure 1: Spread of rabbit calicivirus in Tasmania

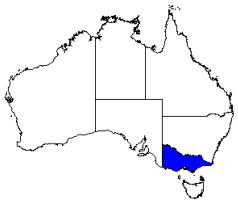


Disease Watch Hotline – 1800 675 888

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 disease situation. Anyone suspecting an exotic disease outbreak should use this number to get immediate advice and assistance.

Contact: Chris Bunn, Animal Diseases/Incidents, DPIE.

Victoria



Contributed by:
John Galvin
Agriculture Victoria

Anthrax

Since 1 April 1997, 14 cases of anthrax occurred on properties in northern Victoria — all on properties on which anthrax cases occurred between January and March 1997. Of these 14 cases, eight were unvaccinated — six introductions to an infected property and two young cattle that were approaching the age when vaccination was to be carried out. The six vaccinated cattle that died were on properties that had both single and multiple anthrax cases previously.

The trickle of post-vaccination deaths from anthrax zone indicates that there are still anthrax spores in the environment and that the vaccine has been very effective in preventing additional cases. The six deaths in vaccinated cattle represent either animals that did not develop an effective immunity or those in which the normal immune response was lowered. The case breakdown rate is very low given that more than 80 000 cattle were vaccinated and there has been only a small number of cases at more than 14 days post-vaccination.

Arsenic poisoning of dingoes

Laboratory testing confirmed that arsenic poisoning was the cause of death of three dingoes and acute gastrointestinal illness in a further 25 dingoes. New sand had recently been put into the pens of the dingoes, and analysis of the sand indicated arsenic levels of about 4500 ppm. The source of the sand was apparently old gold mine tailings.

JD and EBL control

Government–industry programs have been developed to enhance the control of JD and EBL in Victorian cattle herds. Accredited private veterinarians, under government contract, are engaged to test whole herds and provide written disease control advice to their clients. At present, about 600 herds are enrolled in the JD Test and Control program and 150 herds in the EBL program. For both diseases, the average serological reactor rate is about 2% of cattle tested. Problems were encountered in Victorian and interstate laboratories with increased reactivity of a ELISA kit. It is believed that a significant number of these reactions were false positive reactions. One response to the problem has been to re-evaluate the cut-off point for declaring samples as positive. Some laboratories have changed to using other commercial EBL ELISA kits.

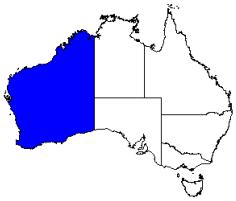
Infections laryngotracheitis

Infectious laryngotracheitis (ILT) was confirmed on a 25 000 bird layer operation that experienced mortalities of about 30 young birds a day. There were few clinical signs of disease. The poultry had been previously vaccinated against ILT, and revaccination apparently controlled the losses.

Poisoning in cattle

In separate incidents, cattle deaths were associated with 1080 poisoning after cattle gained access to baits laid for rabbit control, and with urea poisoning when urea concentrate was fed as a feed supplement.

Western Australia



Contributed by:
Richard Norris
Agriculture WA

Johne's disease camelids

More than 700 alpacas and llamas were tested for the presence of Johne's disease over the past 12 months, with negative results. Because of the relatively small camelid population in Western Australia, it was possible to undertake a full census of stock over 12 months of age. Testing was based mainly on faecal culture (BACTEC) although serology (CFT) was used on animals imported during the study. The results provide further evidence that Western Australia is free of Johne's disease.

Ovine Johne's disease

Since August 1996, sheep imported from eastern Australia have been tested for Ovine JD before and after movement. A new set of import conditions for Western Australia has been drafted and will apply from 1 December 1997. The new conditions will require sheep to be derived from a Monitored

Negative flock, or from a Non-assessed flock that has undertaken a survey test of older sheep. Sheep from MN1 and NA flocks will also be tested before entry. The proposed new import conditions will result in a ten-fold reduction in the risk of introducing JD and will alleviate the need to track sheep in Western Australia and test them again 9–18 months after entry.

Liver fluke snail survey

Pseudosuccinea columella, the intermediate host snail for liverfluke, was found in Albany in June 1997. The snail has been recognised in Western Australia for many years and has colonised much of the south-west of the State. A 'Restricted Area' was declared when the snail was first detected, so that livestock imported from eastern Australia would receive additional treatments to prevent the establishment of liverfluke. The boundaries of the area are currently being redefined.

Bovine tuberculosis

Bovine tuberculosis has been found in the Kimberley for the first time since 1993. The affected herd had achieved Confirmed Free 2 status in 1994. The herd was being tested under the national BTEC as part of routine survey testing of known previously infected herds. The infected animal was an aged cow that had been tested clean on at least three previous occasions, with the last test in April 1994. It is likely that the infected mob and any dangerous contact cattle will be sent to slaughter with compensation being paid by BTEC. This finding highlights the difficulty of eradicating tuberculosis and the value of survey testing.

Surveillance in the Kimberley

Surveillance for animal diseases in the Kimberley area of Western Australia is set to be boosted with a new project that complements the Northern Australian Quarantine Strategy (NAQS). The new project has been developed by AgWA veterinarians and concentrates on areas more than 20 km inland from the coast, the limit of NAQS activities.

AgWA veterinarians will make regular telephone contact with a wide network of people who are likely to know about disease incidents in domestic or feral animals or wildlife. The network will include people such as private veterinarians, helicopter muster pilots, station managers, tourist operators, aboriginal leaders, and other government agencies.

Several factors combine to make surveillance in the Kimberley quite a challenge. These include rugged terrain (making for difficult and costly travel through the vast areas that require surveillance), low stocking densities, low mustering incentive in some areas, and remoteness. With the increasing importance of the live cattle trade and the growth of the tourism industry, it is essential that any exotic disease incursion or new condition is detected and dealt with promptly.

Scabby mouth

Industry in Western Australia has embarked on a massive campaign to encourage producers to vaccinate their sheep against scabby mouth. The committee coordinating the campaign consists of representatives of live sheep exporters, producer organisations, farm consultants, livestock agents, vaccine manufacturers, and AgWA.

The move to vaccinate sheep is in response to warnings from veterinary authorities in several countries in the Middle East that import Australian sheep. They are concerned that levels of scabby mouth have been up to 50% in young sheep on arrival, and have threatened to reject shipments if the problem is not controlled.

Exotic Disease Awareness Enhanced

Two AgWA veterinarians recently completed a seven day exotic disease training course at the Australian Animal Health Laboratory. Veterinarians from all states of Australia and New Zealand had the opportunity for 'hands on' training in the early recognition of many exotic diseases of livestock. Diseases such as classical swine fever, Newcastle disease, avian Influenza, duck viral enteritis and the vesicular diseases were demonstrated and compared to endemic diseases in Australia. Post mortem diagnostic skills were fine-tuned and sample collection emphasized to ensure that the relevant samples were taken so that an exotic disease could be confidently ruled out of a differential diagnosis list.

The course was an excellent overview of exotic disease in general and those diseases considered of the highest risk to Australia.

Quarterly Disease Statistics

General surveillence

All animals at export establishments are inspected. Table 3 gives the throughput over the past 15 months.

Table 3: Animals inspected at export establishments

	Cattle	Calves	Sheep	Lambs	Pigs	Other domestic species	Feral pigs	Other feral
Apr – Jun 96	1 424 305	81 307	2 570 637	1 755 863	578 826	118 468	46 675	91 136
Jul – Sep 96	1 338 938	159 012	2 006 364	1 756 760	576 569	179 377	58 659	86 162
Oct – Dec 96	1 315 722	71 153	2 705 503	1 779 745	572 133	180 315	38 839	113 297
Jan – Mar 97	1 373 175	68 755	2 631 792	1 720 671	509 915	184 562	6 057	93 520
Apr – Jun 97	1 487 368	89 794	2 105 795	1 331 543	384 388	151 705	48 091	101 961
NSW	418 959	53 542	1 032 018	212 314	144 863	100 834	1 815	51 396
NT	13 972	0	0	0	0	0	0	0
QLD	671 137	114	145 347	118 641	82 298	30 711	46 276	26 948
SA	72 170	0	461 600	350 024	4 192	14 141	0	0
TAS	48 740	1 607	7 730	4 023	0	0	0	0
VIC	222 416	34 288	265 834	308 616	111 946	4 154	0	0
WA	39 974	243	193 266	337 925	41 089	1 865	0	23 617

Laboratory testing

The results of serological testing from routine laboratory submissions for the quarter are shown in Table 4.

Table 4: Serological testing from routine submissions to State 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
Apr – Jun 96	980	177	6521	404	1506	461	8918	46	313	1	172	1
Jul – Sep 96	519	97	10000	90	1155	335	7454	51	324	2	173	6
Oct – Dec 96	1042	210	10287	100	1535	481	3130	39	494	0	240	8
Jan – Mar 97	729	197	5064	281	851	203	3256	147	416	0	287	4
Apr – Jun 97	796	144	6925	463	1426	528	5860	140	398	3	240	0
NSW	281	63	1135	114	452	50	320	1	213	0	143	0
NT	50	31	349	150	262	131	2273	128	0	0	0	0
QLD	268	45	5002	199	501	308	2516	11	99	3	28	0
SA	74	0	38	0	89	19	0	0	14	0	4	0
TAS	8	0	9	0	8	0	346	0	0	0	0	0
VIC	69	0	70	0	69	0	0	0	0	0	0	0
WA	46	5	322	0	45	20	405	0	72	0	65	0

Northern Australia Quarantine Strategy

In recognition of the special quarantine risks associated with Australia's sparsely populated northern coastline, the Australian Quarantine and Inspection Service (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.

Contact: David Banks, AQIS

Table 5: Summary of NAQS surveillance and monitoring data from 1 April to 30 June 1997.

Disease	Number of tests/inspections	Results
Japanese encephalitis	79 sentinel pigs 9 sentinel cattle 167 survey animals (cattle, pigs, horses, migrating birds)	New seroconversion identified in 4 sentinel pigs on Saibai Island on 7 April 97. One pig tested positive on Boigu Island on 19 June 1997. Results pending on migrating birds.
Screw-worm fly	239 clearances of swormlure traps	No *Chrysomya bezziana* detected.
Surra	58 cattle 20 donkeys 2 dogs	All negative by Card Agglutination Trypanosome Test
Taenia solium	No tests in this quarter.	
Trichinosis	51 pigs	Results pending.
Avian influenza, Newcastle disease and infectious bursal disease	53 Migrating birds	Results pending
Asian honey bee	Surveillance conducted on islands in the Torres Strait Protected and Special Quarantine Zones	No detection except where previously present namely Saibai, Dauan, Boigu Islands.
Varroa and Tropilaelaps mites	Examination of sentinel hives and feral colonies of *A.mellifera.*	No detection
Canine ehrlichiosis	Survey in progress	

Zoonoses

The National Notifiable Diseases Surveillance System of the Communicable Diseases Network Australia New Zealand collects statistics about many human diseases. The CDI is accessible at http://www.health.gov.au/hfs/pubs/cdi/. Table 6 summarises some of the information for zoonoses.

Contributed by: Communicable Diseases Intelligence, Department of Family Services and Health

Table 6: Notifications of zoonotic diseases in humans

Disease	Q2-96	Q3-96	Q4-96	Q1-97	Q2-97	Current quarter						
	Australia				AUST	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Brucellosis	10	8	13	12	4	0	0	0	4	0	0	0	0
Hydatidosis	12	9	17	6	13	0	3	0	2	0	2	3	3
Leptospiros	65	44	55	31	40	0	11	0	20	1	1	4	3
Listeriosis	15	23	19	23	22	0	2	0	1	1	1	5	12
Ornithosis	24	12	24	22	12	0	0	0	0	1	0	11	0
Q fever	135	140	142	139	166	0	74	0	83	1	0	4	4

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. Table 7 gives information on isolates of salmonellae submitted from animals to NSSS from participating laboratories around Australia during the previous quarter. Quarterly newsletters and annual reports of both human and non-human isolates are published, and detailed data searches are provided on request to NSSS.

Contributed by: National Salmonella Surveillance Scheme, Microbiological Diagnostic Unit, University of Melbourne.

Table 7: Salmonella notifications, 1 January to 31 March 1997

Serovars	avian	bovine	canine	equine	feline	ovine	porcine	other	Total
S. bovismorbificans	1	8	0	0	0	0	3	0	12
S. dublin	0	15	0	0	0	0	0	0	15
S. infantis	0	1	1	0	0	0	0	0	2
S. typhimurium	5	56	2	9	2	8	0	1	83
Other	5	17	8	2	3	4	12	51	102
Total	11	97	11	11	5	12	15	52	214

Suspect Exotic Disease Investigations

There were 20 exotic disease investigations reported during the quarter, as shown in Table 8.

Table 8: Exotic disease investigations, 1 April to 30 June 1997

Disease	Species	State	Reponse (key below)	Finding
Porcine reproductive and respiratory syndrome (PRRS)	porcine	NSW	3	Infectious foetopathy
Avian influenza	avian	NSW	3	Negative
Glanders	human	NSW	3	Atypical *Br. suis*
Bluetongue	ovine	NSW	3	Negative
Avian influenza	avian	NSW	3	Negative
Vesicular stomatitis	equine	NT	1	Negative
Tropical canine pancytopaemia	canine	NT	3	Canine ehrlichiosis not equivocally refuted
Rabies	feline	QLD	3	Cryptococcosis
Bat lyssavirus	fauna	QLD	3	Lyssavirus excluded
Bat lyssavirus	fauna	QLD	3	Lyssavirus excluded
Rabies	canine	QLD	3	Rabies excluded
Asian honey bees	bee	QLD	1	Native blue-banded bees
Bluetongue	ovine	QLD	2	Lantana poisoning
Bovine spongiform encephalopathy	bovine	VIC	2	Polioencephalomalacia
PRRS	porcine	VIC	3	Interstitial pneumonia
Bovine brucellosis	bovine	WA	2	Negative
Newcastle disease	avian	WA	1	Negative
Transmissible gastroenteritis of pigs	porcine	WA	3	Negative
Contagious bovine pleuropneumonia	bovine	WA	3	Negative
Newcastle disease	avian	WA	2	Negative

KEY to highest level 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)

Control activities

Enzotic 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 all undertaking a program of bulk milk testing of all dairy herds.

Table 9: Dairy herds tested free of EBL at 30 June 1997

Herds	NSW	NT	QLD	SA	TAS	VIC	WA	AUST
Free	1386	0	1713	750	718	5291	455	10 313
Total	1795	0	2027	807	810	8453	467	14 359

Ovine brucellosis

Accreditation programs for ovine brucellosis freedom are operating in most States. Table 10 shows the number of accredited flocks at the end of the quarter.

Table 10: Ovine brucellosis accredited free flocks at 30 June 1997

NSW	NT	QLD	SA	TAS	VIC	WA	AUST
1280	0	62	544	159	781	86	2914

Johne's disease

In Australia, JD is seen primarily in dairy cattle. It occurs occasionally in beef cattle, sheep and dairy goats, and has been diagnosed in a small number of alpacas. JD occurs in NSW, Victoria, Tasmania and South Australia. Surveillance programs in Queensland, Western Australia and the Northern Territory beef herd support the view that they are free of JD, and active measures are taken to stamp-out any incursions. At the end of June, 242 herds had reached the status of Tested Negative 1 or Monitored Negative 1 or greater in the JDMAP.

Table 11: Herds/flocks with JD at 30 June 1997

	Cattle	Sheep	Goats	Alpacas	Total
NSW	144	170	8	1	323
NT					free
QLD					free
SA	27	0	0	0	27
TAS	32	7	9	0	48
VIC	1658	8	8	11	1685
WA					free
AUST	1861	185	25	12	2083

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. *Brucella abortus* has been excluded as the cause of the reactor found in the third quarter of 1996.

A total of 142 bovine abortion investigations were reported during this quarter — all with negative results for bovine brucellosis. The results of recent brucellosis surveillance are shown in Table 12.

Table 12: Surveillance for bovine brucellosis

	Abortion investigations		Test for other reasons	
	Tests	+ve	Tests	+ve
Apr –Jun 96	196	0	5593	0
Jul – Sep 96	247	0	4227	1
Oct – Dec 96	163	0	4365	0
Jan – Mar 97	122	0	2288	0
Apr – Jun 97	142	0	4336	0
NSW	16	0	258	0
NT	0	0	1082	0
QLD	49	0	2599	0
SA	4	0	21	0
TAS	35	0	92	0
VIC	0	0	0	0
WA	38	0	284	0

Tuberculosis

Statistics about the National Granuloma Submission Program are unavailable this quarter because their database is being restructured. As mentioned in the State reports, three breakdowns of herds were reported in this quarter, one in Western Australia and two in the Northern Territory.

Table 13: Recent results of the National Granuloma Submission Program

	Stock Inspected	Granulomas Submitted	TB +ve
Jan - Mar 96	1 406 772	806	7
Apr - Jun 96	1 484 270	1005	0
Jul - Sep 96	1 497 812	1215	1
Oct - Dec 96	1 393 533	1144	2
Jan - Mar 97	1 428 652	955	0

National Residue Survey

Table 14 summarises the results for the quarter for data collected by the National Residue Survey.

Contributed by: National Residue Survey, Bureau of Resource Sciences

Table 14: National Residue Survey, 1 April to 30 June 1997

Each pair of figures gives the number of samples tested and the number of samples above either the maximum residue limit or the maximum permitted concentration.

	NSW		NT		QLD		SA		TAS		VIC		WA		AUST	
Antimicrobials																
Cattle	170	0	7	0	178	1	25	0	7	0	126	1	17	0	530	2
Pigs	148	4	0	0	105	1	54	0	1	0	69	3	34	0	411	8
Poultry	5	0	24	0	3	0	8	0	24	0	9	0	24	0	97	0
Sheep	68	0	0	0	5	0	14	0	1	0	33	0	21	0	142	0
Other	42	0	3	0	20	0	15	0	0	0	22	0	3	0	105	0
Total	433	4	34	0	311	2	116	0	33	0	259	4	99	0	1285	10
Anthelmithics																
Cattle	118	0	3	0	112	0	18	0	10	0	56	0	13	0	330	0
Pigs	26	0	0	0	28	0	5	0	1	0	14	0	9	0	83	0
Sheep	119	0	0	0	16	0	36	0	3	0	72	0	35	0	281	0
Total	263	0	3	0	156	0	59	0	14	0	142	0	57	0	694	0
Growth promotants																
Cattle	179	0	10	0	152	0	39	0	9	0	111	0	15	0	515	0
Pigs	12	0	0	0	5	0	2	0	0	0	8	0	1	0	28	0
Poultry	0	0	1	0	0	0	1	0	2	0	1	0	2	0	7	0
Sheep	96	0	0	0	17	0	30	0	3	0	73	0	60	0	279	0
Other	13	0	2	0	15	0	12	0	0	0	22	0	3	0	67	0
Total	300	0	13	0	189	0	84	0	14	0	215	0	81	0	896	0
Insecticides																
Cattle	457	0	31	0	425	0	53	0	46	0	225	0	56	0	1293	0
Feral	29	0	0	0	23	0	0	0	0	0	0	0	0	0	52	0
Pigs	83	0	0	0	43	0	29	0	0	0	42	0	17	0	214	0
Poultry	4	0	5	0	0	0	2	0	6	0	3	0	6	0	26	0
Sheep	244	0	0	0	41	0	70	0	16	0	176	0	111	0	658	0
Other	57	0	0	0	33	0	40	0	0	0	17	0	9	0	156	0
Total	874	0	36	0	565	0	194	0	68	0	463	0	199	0	2399	0
Metals																
Cattle	29	2	1	1	28	3	2	1	5	0	21	0	2	0	88	7
Pigs	18	0	0	0	13	2	2	0	0	0	8	1	4	0	45	3
Poultry	0	0	3	0	0	0	1	0	3	0	2	0	3	0	12	0
Sheep	26	1	0	0	2	0	5	0	3	0	16	3	15	0	67	4
Other	0	0	0	0	0	0	0	0	0	0	2	0	1	0	3	0
Total	73	3	4	1	43	5	10	1	11	0	49	4	25	0	215	14

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All Canberra numbers changed from 06 xxx xxxx to 02 6xxx xxxx on August 16th.

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