ANIMAL HEALTH SURVEILLANCE QUARTERLY

Newsletter of Australia's National Animal Health Information System

Volume 1 **Issue 3**

Quarterly Report for 1 July to 30 September 1996

Preface

This issue of the *Animal Health Surveillance Quarterly* summarises the findings of disease surveillance and monitoring activities reported to the National Animal Health Information System (NAHIS) for the period from 1 July to 30 September 1996. Summary data are collated from a variety of sources, including State Departments of Agriculture, the Australian Quarantine and Inspection Service, the National Residue Survey, the Commonwealth Department of Health and Family Services and various national reference laboratories. 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. However, because of the short reporting and production time, minor discrepancies may occur.

This issue includes a lead article on Australia's freedom from porcine reproductive and respiratory syndrome, as well as highlights of disease surveillance activities, items of interest from the States and Territories, and a summary of quantitative data for the quarter. This issue is also available on the internet through the NAHIS worldwide web site.

I commend this report as a reference document and trust that you will find it useful.

GARDNER MURRAY
Australian Chief Veterinary Officer

Contents

Australia free of PRRS	1
NAHIS on the Web	3
Equine morbillivirus — fruit bat reservoir	3
State reports	5
Exotic disease news	10
Quarterly statistics	11
NAHIS contributors	16

Australia Free of PRRS

Porcine reproductive and respiratory syndrome (PRRS) has been identified as a cause of reproductive failure in sows and respiratory disease in young pigs. PRRS appeared overseas as a new disease in the mid to late 1980s.

Australia has had no clinical evidence of PRRS and considers itself to be free of this disease, along with other major pig diseases such as foot-and-mouth disease, swine vesicular disease, vesicular stomatitis, African swine fever, classical swine fever, Aujeszky's disease and transmissible gastroenteritis. To maintain this status, Australia prohibits or applies quarantine restrictions on the import of pigs and pig products from many parts of the world.

A serological survey, funded by the Australian Pig Research and Development Corporation, was undertaken in the first quarter of 1996 to look for evidence of exposure to PRRS virus in Australian pig herds.

Prepared by the Animal and Plant Health Branch of the
Bureau of Resource Sciences

Survey design

From studies in endemic countries, it would be expected that if PRRS were present in Australia the proportion of infected herds would be greater than 5%, and that in infected herds at least 25% of the finisher pigs would have antibodies to the virus. The survey was designed to provide a 99% confidence of detecting at least one infected pig herd in Australia assuming this level of infection. A commercial indirect enzyme-linked immunosorbent assay (ELISA) kit (IDEXX Laboratories) was used to test for PRRS antibodies.

The IDEXX ELISA is considered the test of choice for large-scale testing for PRRS because it lends itself to automation, has acceptable specificity and sensitivity, and detects antibody to all strains of the virus. Although the test is claimed to have high specificity (around 98%), individual false positive reactions may occur in the field. In designing the survey, false positives posed a special problem. Because Australia is believed to be free of PRRS, each positive result would have to be investigated to determine if it were a true positive.

The predictive value of a positive test result can be improved by using a second, different, test on those samples that are positive to the first test. Accordingly, for this survey, a two-stage testing procedure was used involving an initial screening test with follow-up testing of herds where reactors were found. Samples were initially tested with the ELISA and where any reactors were found, a second test, the indirect immunofluorescence antibody (IFA) test would be used on all samples from that herd.

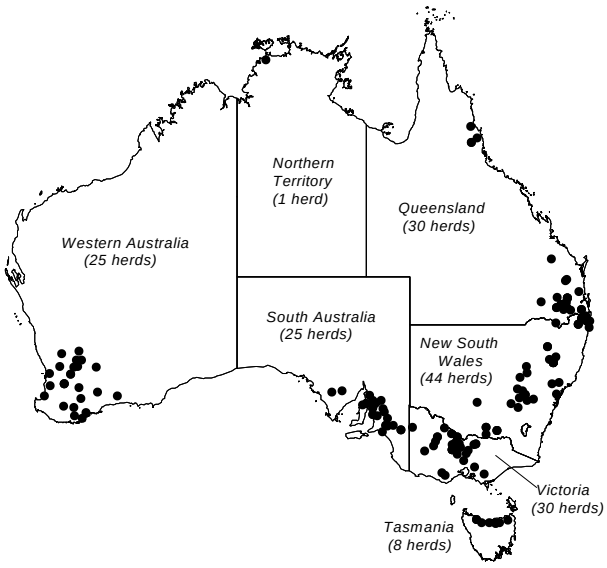
Although this procedure reduces the chance of false positives, the chance of false negatives is increased. This problem was addressed by taking extra samples. A minimum of 157 pig herds, sampled at the rate of five samples per herd, was required to give the desired level of confidence.

Blood samples were collected at pig abattoirs, from finisher pigs (about six months of age) under the direction of government veterinary officers in each State and Territory. Samples were collected to provide a broad geographical coverage of pig production in Australia with all the States and the Northern Territory represented. (The Australian Capital Territory has no pigs.) The distribution of sampling by State and Territory was designed to reflect breeder sow populations (Table 1) but was weighted slightly in favour of colder States because it has been suggested that the persistence of the virus in pig populations may be favoured by more temperate conditions.

Table 1: Distribution of pigs at October 1994
Source: Australian Pig Corporation

State	Herds		Sows		Total pigs
NSW	1 609	34.1%	98 949	31.2%	861 931
NT	7	0.2%	373	0.1%	2 746
QLD	885	18.7%	67 215	21.2%	626 004
SA	845	17.8%	49 053	15.5%	446 561
TAS	131	2.8%	6 435	2.0%	52 193
VIC	588	12.5%	57 684	18.2%	531 356
WA	656	13.9%	37 679	11.9%	324 115
AUST	4 721	100.0%	317 382	100.0%	2 844 906

Figure 1: Pig herds sampled for the survey



Results

In all, 163 herds were sampled and 875 sera tested. The number and locations of herds sampled for the survey are shown in Figure 1. The samples were tested at the Australian Animal Health Laboratory. Four samples from four different herds showed some evidence of reactivity in the ELISA test by being above the cut-off value for the sample-to-positive ratio. Three other samples, one from one of these herds and two from other herds, were close to the cut-off value.

These seven samples, plus all the other samples from each of these six herds, were retested with the ELISA test and subjected to further testing with the IFA test, for antibodies to both European and United States strains of PRRS virus. All of the sera were clearly negative for antibodies when tested with the IFA test.

Conclusion

The finding of several reactors to the ELISA test among the 875 samples tested was not unexpected and the survey design included a protocol for investigating such reactors. Based on the additional testing, it can be concluded that the reactions were not due to the presence of specific antibodies against PRRS virus.

The results of this survey support the view that the Australian pig industry is free of PRRS virus.

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

NAHIS is on the Web

The National Animal Health Information System is now accessible via the internet address:

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

The site is still being developed. So far, we have collated descriptive information for about 60 exotic and 15 endemic diseases. A working model seemed a good way to elicit comments — all suggestions will be gratefully received.

Information from NAHIS is available from the site. As well as giving information about the data fields being collected, a standard query for many of the diseases summarises the last five quarters' data — a table of information at the State level and a graph at the national level. Such a page is generated dynamically from the database when the request is made, so it won't be displayed quite as soon as a static page of information.

It is worth restating a couple of key points about NAHIS. Its focus is on area-based data — it does not record data about individual properties. The system collects summaries of animal health information from many sources and does not duplicate the data in those systems. If more detailed information is required, the original source should be contacted.

This newsletter is available from our web site if you prefer to receive it electronically rather than on paper. Just register your e-mail address from the site, and we will let you know the instant each issue is released — you can then visit the site and download it.

AUSVETPLAN outlines Australia's proposed response to various exotic disease incursions. The various sections of this plan are available from the site.

There are a few more miscellaneous items. There are links to the web sites of organisations with responsibilities for animal health — both Australian and international. The NAHIS site will also provide links to specific web pages that have relevance to animal health matters. Any suggestions are welcome.

Contributed by: Rob Cannon, Animal and Plant Health Branch, Bureau of Resource Sciences

Equine Morbillivirus — Likely Bat Reservoir

A new bat paramyxovirus has been isolated form several fruit bats, colloquially called flying foxes. The similarity of this new virus to the virus associated with the fatal 'Acute Equine Respiratory Syndrome' (AERS) or equine morbillivirus pneumonia, suggests that the fruit bat is the natural host of AERS.

Disease background

In September 1994 a virus, later referred to as the equine morbillivirus (EMV), was isolated from horses by the Australian Animal Health Laboratory and by the Animal Research Institute of the Queensland Department of Primary Industries (QDPI), and from a human by Queensland Health.

Fourteen horses died as a result of infection with EMV in south-east Queensland during September 1994. A further seven horses were shown to have been infected by the virus. Two people who had close contact with the first horse to become ill with the infection also became infected with the virus, in one case with fatal consequences.

During October 1995, a third case of human infection with EMV was diagnosed. The man had close contact with two horses that died in August 1994. Retrospective investigation of tissues from these two horses showed them to have been infected with EMV. The deaths of these two horses occurred about four weeks before the first horses in south-east Queensland became ill with EMV infection. No direct link was able to be established between the two incidents, which were separated by about 800 kilometres.

Investigations

Experimental challenge of a range of animals showed that cats and guinea pigs could be artificially infected with the virus. However a survey of 500 cats in the Brisbane metropolitan area found none that tested positive for EMV. Similarly a retrospective study of horse specimens submitted to veterinary laboratories in Queensland going back over many years did not reveal any cases of EMV infection.

Since 1994, more than 5000 animals throughout Queensland, including a range of wildlife species, have been tested for evidence of EMV. Most of those tested were horses. All tests, with the exception of fruit bats, failed to show any evidence of EMV infection.

Fruit bats

QDPI researchers found that about 15% of fruit bats tested, from all four species present in Australia, carried antibodies to EMV. Table 2 summarises the results of testing. This antibody reactivity with equine morbillivirus confirmed that the fruit bats had been previously infected by a member of the Paramyxovirus group of viruses, which is the same family as that to which EMV belongs and indicates the bat virus is closely related to EMV. It was not possible, based on antibody presence alone, to establish the degree of relatedness of the bat paramyxovirus (BPV) to EMV.

In September 1996 a paramyxovirus was isolated from the uterine fluids of a sick female grey-headed fruit bat (*Pteropus poliocephalus)* found in the Brisbane area. An apparently identical virus was subsequently isolated from three other fruit bats.

The first virus isolated reacts strongly with human and horse serum samples that have antibodies to EMV. Similar changes are produced in cell cultures by BPV and EMV. Preliminary studies have shown that the genetic sequence of the newly isolated virus is similar to the EMV isolates. These results indicate that BPV and EMV are the same virus and suggest that fruit bats may be its natural host.

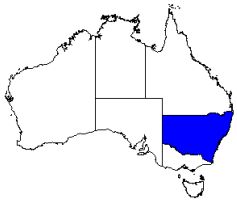
Source: Queensland DPI Information Sheet—A new bat paramyxovirus of flying foxes

Table 2: Results of EMV survey in fruit bats as at 25 September 1996

	Total		*P. alecto*		*P. conspicillatus*		*P. poliocephalus*		*P. scapulatus*	
	tests	+ve	tests	+ve	tests	+ve	tests	+ve	tests	+ve
Airlie Beach	9	1	5	1	4	0	0	0	0	0
Brisbane	200	20	47	7	0	0	116	12	37	1
Bundaberg	1	0	1	0	0	0	0	0	0	0
Cairns	24	2	0	0	24	2	0	0	0	0
Gold Coast	9	3	3	2	0	0	0	0	6	1
Mackay	11	2	11	2	0	0	0	0	0	0
Maryborough	13	0	8	0	0	0	5	0	0	0
NSW	25	1	1	0	0	0	23	1	1	0
Yeppoon	20	10	14	4	6	6	0	0	0	0
Total	312	39	90	16	34	8	144	13	44	2

State and Territory Reports

New South Wales



Contributed by:
Evan Sergeant
NSW Agriculture

Flood Plain Staggers

Flood plain staggers (FPS) affects mainly cattle. It was first diagnosed in western NSW in 1990. Since then, only occasional cases have occurred, but there is a substantial growth of the grass (*Agrostis avenacea*) associated with FPS along the Darling and Bogan Rivers this year. Growth has been noted particularly in areas badly affected in the last outbreak, but also in other areas.

Surveys of the Bogan and Darling areas have shown evidence of both nematode galls and *Clavibacter toxicus*, the bacterium associated with FPS. The risk of disease this year is difficult to assess. However, there are indications that the risk may be lower than in 1990:

- there are far fewer plants with the complex of nematode/bacteria/plant pathology that leads to FPS;
- the plant is less abundant than in 1990, and far more alternative feed is available, which may reduce the consumption of *Agrostis*; and
- there has been some continuing rain, which may maintain alternative feed in good condition.

Some areas appear to have substantially more *Agrostis* this season than in 1990, and are therefore likely to be at increased risk of disease.

Anthrax

One outbreak of anthrax was confirmed during the quarter, in the Hillston Rural Lands Protection District. The disease was confirmed in both pigs and sheep, with 18 pigs and 4 lambs dying. The first deaths occurred in lambs, shortly after mulesing, with pig deaths commencing three days later. The pigs are thought to have been infected by scavenging on the carcases of lambs presumed to have died of anthrax. Affected pigs died rapidly and had a haemorrhagic, oedematous swelling of the throat.

Johne's disease

Mycobacterium paratuberculosis was isolated from a pyogranulomatous lesion in a thoracic lymph node of a cow. This lesion was submitted for routine testing for TB, as part of the National Granuloma Submission Program. The property of origin of the infected cow has no previous known history of Johne's disease, and investigations are continuing to further clarify its status, and the source of infection.

Johne's Disease Market Assurance Program

Since the launch of the Market Assurance Program last May, more than 200 NSW veterinarians have undertaken the training program. A total of 47 herds have now completed their first herd test, with 34 progressing to the status TN1 (tested negative). The remaining 13 herds are awaiting the outcome of follow-up investigation of serological positive animals. To date, from 5000 animals tested under the program, there have been only 20 positive reactors in 14 herds, a very encouraging result for producers concerned about false positive reactors disrupting their ability to trade. Of the 47 herds so far enrolled in the program, about two-thirds are dairy herds.

Ovine Johne's disease

The NSW Ovine Johne's disease (OJD) Strategic Plan was finalised and adopted by the OJD Sheep Industry Steering Committee during the quarter. Work has now commenced on the development of a market assurance program for OJD in NSW.

Targeted surveillance, including tracing from infected properties, MAP testing and investigation of cases of illthrift, is planned to define more clearly the extent and distribution of the disease in NSW. Work has already started on the investigation of properties linked by the movement of sheep to or from known infected properties. Although this is a large task, it should provide much more accurate information on the distribution of OJD in NSW. Currently, of about 150 flocks detected with OJD, most (about 80%) have been in the Central Tablelands area, with most other cases linked to this area by sheep movements.

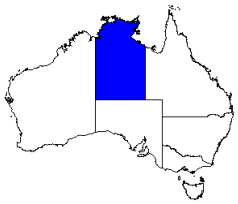
Footrot

The State's Footrot Strategic Plan continues to progress well towards its target of eradication of footrot by the end of the year 2000. About 85% of the State is of Protected or Control Area status, and 71% of the State's flocks and 75% of its sheep are in either Protected or Control areas.

The excellent seasonal conditions experienced in much of the State have created ideal conditions for the spread of footrot and will provide a good test of the success of on-farm eradication programs conducted over last summer and autumn.

Northern Territory

Contributed by:
Diana Pinch
NT DPIF



Crocodiles

Increased mortalities in hatchling (less than one year old) saltwater crocodiles were investigated on several farms in the Darwin area. The hatchlings were in good condition and clinical signs varied from sudden death to neurological signs such as 'stargazing' and incoordination. Systemic *Providencia rettgeri* infections were confirmed. There was considerable variation in the antibiotic sensitivity of the organism, even on the same farm. Appropriate antibiotics resolved the condition. It appears that the increased mortalities are associated with additional stresses, such as marked climatic change (in these cases, cool nights or heavy rain).

Anaplasmosis

Anaplasmosis was diagnosed in a herd near Darwin. The cattle had been sourced from the Victoria River District several weeks before symptoms were first seen. Affected animals were anaemic and 'poor doers'. The cattle were not treated because they were part of the National Arbovirus Monitoring Program and any treatment against ticks would disrupt insect activity. Serology demonstrated that twenty animals not positive for *Anaplasma marginale* antibodies on arrival had seroconverted after 14 weeks. A similar rate of seroconversion was seen to *Babesia bigemina*, but few *B. bigemina* organisms were observed, and the clinical signs and response to treatment supported the diagnosis of anaplasmosis.

Cattle tick protected area

The protected areas for cattle tick infestation have recently been revised and the 'tick line' moved north. Gazettal of the new areas will occur soon. An additional buffer area, the 'Northern Protected Area', will come into effect.

Plant poisoning

Deaths of yearling brahman cattle in an Alice Springs district breeder mob were investigated during the quarter. Plant poisoning due to *Eremophila duttoni* (harlequin fuchsia bush) was diagnosed. Contributing factors included recent introduction of the cattle to dried off feed with rain at the end of June that stimulated shooting and flowering of the harlequin fuchsia bush.

Blue–green algal poisoning

Cow mortalities on a Barkly Tablelands property were investigated. A tentative diagnosis of blue–green algal poisoning was made, and confirmed when no further deaths occurred after treating the water tank with copper sulphate.

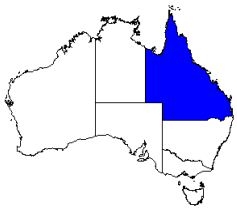
Rabbit calicivirus disease

Rabbit calicivirus disease was diagnosed at several locations between Alice Springs and the South Australian border during August and September. Confirmation of the diagnosis was made by ELISA at the Berrimah Veterinary Laboratories. It appears that at the site of the first Northern Territory case, the disease infected most rabbits, with about 5% surviving.

Bovine Brucellosis Investigation

A heifer was blood sampled for routine export testing and had a positive complement fixation (CF) test (*Brucella abortus*) result. Results from two subsequent bleeds were negative on the CF test and weak positive reactions to the Rose Bengal test. Bacteriological culture of lymph nodes did not grow *Br. abortus*. Infection with *Brucella abortus* was excluded as a cause of the initial positive test result.

Queensland



Contributed by:
Peter Black
Queensland DPI

Rabbit calicivirus

Rabbit calicivirus has been detected at a number of sites in south-west Queensland, at Rolleston, Taroom, at St George and north of Chinchilla. The virus was formally released in Inglewood on 14 October 1996.

Cattle

Clinical cases of bovine ephemeral fever continued to be reported in a number of northern coastal shires this quarter.

Clostridial disease

Botulism caused mortalities in areas not traditionally associated with this disease, the Banana and Bauhinia Shires. Botulism was diagnosed on the basis of clinical signs, post mortem examination and response to vaccination. In one case the classical clinical sign of flaccid paralysis of the tongue was noted. Blackleg caused the death of twelve 6–8-month-old calves still on their dams, also in the Banana Shire.

Poisoning

Three weaners died on a Belyando Shire property after gaining access to lead batteries.

Diazinon toxicity caused the deaths of three bulls in the Mackay area. Extension material and a media release has been distributed by the manufacturer warning about the use of old previously opened containers of the product involved.

Plant poisoning (*Bowenia* species) caused deaths on three properties on the Atherton Tablelands. In one case, six dairy cows in a group of 100 died after consuming these fern-like plants.

Tick Fever

Cases of babesiosis and anaplasmosis were recorded in a number of shires in the tick-infected area of Queensland. Ten steers died in one herd affected by *Babesia bigemina*.

Coccidiosis

In a number of shires in North Queensland, coccidiosis has been confirmed as the cause of death in varying numbers of young calves and weaners aged from eight weeks to six months. Contaminated yards and stress are two of the factors believed to have contributed.

Horse diseases

Osteodystrophia fibrosa continues to be reported in horses in Central Queensland.

A horse that originated from Mackay presented with clinical signs of oedema of the head and abdomen. A diagnosis of pneumonia was made by the veterinarian. Samples were also sent to the Australian Animal Health Laboratory where equine morbillivirus was ruled out.

A property in the Belyando Shire had two horses test positive to equine infectious anaemia this quarter.

Johne's disease in a goat herd

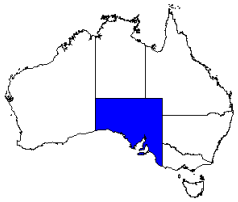
A case of Johne's disease (JD) was confirmed in a six year old Saanen doe in a dairy goat herd in the Brisbane valley. The goat originated from NSW and was tested negative when introduced into Queensland three years ago. The doe has since been depastured on two properties. Recently, the goat developed clinical signs consistent with JD, was euthanised and a full range of samples collected at the Toowoomba veterinary Laboratory. JD was confirmed. The herd is currently in quarantine and a whole herd test has been performed with negative results. The most recent traceback herd has also been tested with negative results. Investigations are continuing.

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

South Australia



Contributed by:
Kim Critchley
Primary Industries SA

Bovine tuberculosis

Following the abattoir detection of tuberculosis in a granuloma from a cow from the South East of the State, traceback led to the testing of a property in the pastoral country. The testing has begun but will be spread over a number of weeks as cattle will need to be mustered and feed brought in for animals held pending the reading of the test. This has been hindered by recent rains allowing cattle to find water other than in the normal watering points, making mustering difficult.

Tuna mortality

The tuna mortality at Port Lincoln reported last quarter has been confirmed as most likely due to a combination of environmental stresses and gill damage resulting from stirred-up sediment.

Ovine Johne's disease

Discussions have been held between Primary Industries SA and the SA sheep industry over possible measures to ensure the state remains free of OJD so that the free movement of sheep to other free States is not impeded.

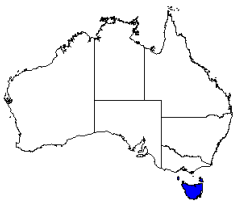
Emergency services plan

Exotic disease eradication is part of the Emergency Services Plan of the department. Recently, the communications systems have been markedly upgraded. The system is integrated with the police system and anyone with the appropriate two-way radio can connect to the telephone system. It is also possible to call a two-way radio from a telephone if the radio is on.

Livestock Act

A White Paper was issued regarding a proposed new Livestock Act to replace the *Stock Act 1990*. Although many of its functions will be similar to those of the existing *Act*, the new *Act* will take account of changes in disease control, regulation and changing emphases (e.g.residues, Vendor Declarations, export requirements). It is expected that the new legislation will be presented to Parliament in late November.

Tasmania



Contributed by:
John Elliot
DPIF, Tasmania

Ovine Johne's disease

OJD has now been confirmed on seven properties on Flinders Island. Mainland States have been notified of relevant sheep movements. Infection has not been found in any other Tasmanian flock which has introduced sheep from infected properties on Flinders Island.

Ross River virus in horses

A private veterinary practitioner reported a number of clinical cases in the Hobart area. A serological survey of 114 horses was carried out. Twenty-four, including seven clinical case, had antibody titres to Ross River virus. Prevalences were higher in rural areas. Such areas have more native marsupials, which are likely to be hosts and amplifiers of the virus.

Possible new viral disease of fish

The Fish Health Unit found skin and fin lesions in flounder from northern Tasmania. The Australian Animal Health Laboratory's Fish Health Reference Laboratory. isolated a herpesvirus similar to epidermal necrosis herpes of Japanese flounder.

Provisional freedom from hydatid disease

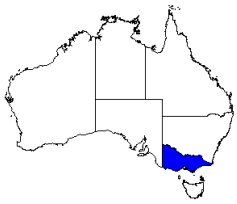
In February, Tasmania was declared Provisionally Free of hydatids after a community–government control program that started 30 years ago. Provisional Freedom is the first stage of eradication. Abattoir surveillance will continue. Any infected flocks found will be quarantined and control measures instituted. Import controls to minimise the risk of disease re-entry will be implemented.

Insecticide residues in wool

The International Wool Secretariat has released a booklet for producers on methods of lice and fly control that will minimise the level of pesticides in wool at shearing. These guidelines are largely based on survey and extension work carried out by the Department of Primary Industry and Fisheries in Tasmania.

Victoria

Contributed by:
John Galvin
Agriculture Victoria



Antibacterial residues in bobby calves

Under a program to complement monitoring for antibacterial residues in bobby calves slaughtered at export abattoirs, a total of 5106 calves were tested in the four major Victorian domestic abattoirs that process bobby calves. Forty five (0.88%) calves were positive on the Microbial Inhibition Test. However, confirmatory testing using high performance liquid chromatography, indicated that only nine calves (0.18%) had residues above 50% of the relevant maximum residue limit. Of these nine calves, the residues were sulphonamides (5), tetracyclines (2) and beta-lactams (2).

Ovine Johne's disease

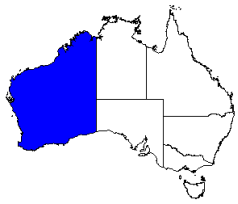
Investigations have continued into the occurrence of OJD since it was first detected in Victoria in December 1995. A survey of 40 sheep flocks in the East Gippsland locality where OJD was first detected was conducted in July 1996. Considerable effort has also been put into tracing the movement of sheep from three infected studs located in Victoria, NSW and Tasmania. The disease has been confirmed in 19 flocks that run a total of some 55 000 sheep.

Psittacosis

The Department routinely receives reports from the Department of Health and Community Services of cases of psittacosis (chlamydiosis) in humans. Investigations involve contacting affected persons to determine their exposure to psittacine or other birds and, where necessary, recommending antibiotic treatment for potentially infected and exposed birds. Some investigations involve birds recently purchased from pet shops and bird markets. In these cases, the sources of birds are determined and hygiene standards of establishments are examined in conjunction with Local Government Environmental Health Officers.

Western Australia

Contributed by:
Richard Norris
Agriculture WA



New Office of the Chief Veterinary Officer

As part of an organisational restructuring, Agriculture WA has established an Office of the Chief Veterinary Officer (CVO) and appointed Peter Buckman as Deputy Chief Veterinary Officer and Manager. Barry Richards (Chief Veterinary Pathologist), Trevor Ellis (Principal Veterinary Virologist) and Richard Norris (Senior Veterinary Officer) will also be part of the Office core group.

The Office will coordinate policy advice and be the first point of contact for animal health operational matters that come under the responsibilities of the current CVO, John Edwards. The Office will direct animal disease emergency responses and specific national animal health projects, oversee regulation of disease prevention and control, and administer delegated legislative responsibility.

John Edwards will continue to represent the State on the national Veterinary Committee and a number of other national policy subcommittees and hold the delegated legislative responsibility assigned to the CVO. John Edwards is also the Manager for Surveillance and Preparedness.

Liver fluke barrier strategies tested

A survey of cattle and young horses imported from the liver fluke-endemic areas of eastern Australia is being conducted to check that barrier strategies are working.

Cattle, sheep, camelids and horses entering WA from interstate are currently treated with triclabendazole to prevent the introduction of liver fluke. However, the emergence of triclabendazole-resistant fluke has renewed the threat to WA's liver fluke-free status. If introduced, liver fluke may become established because the intermediate host (the aquatic snail *Pseudosuccinea columella*) is present in WA.

Agriculture WA staff will collect faecal samples from selected cattle and young horses at the time of their final treatment for liver fluke after entry. The faeces will be examined at the Animal Health Laboratories for the presence of fluke eggs. Past incursions of liver fluke associated with imported stock and were successfully eradicated.

Ovine Johne's disease

In August 1996, Western Australia amended the conditions of entry for sheep from the eastern States, in order to reduce the risk of introducing OJD. Since 1985, a declaration by the owner that OJD was not known or suspected on any property of origin of the stock for the previous five years has been required. The new conditions require, in addition to the declaration, that sheep undergo an approved test (currently the agar gel immunodiffusion test) for OJD within 30 days before movement. The sheep will be tested again 9 to 18 months after entry. It is likely that the entry requirements will be amended further in the next few months and will be consistent with the conditions required to import sheep from New Zealand into Australia.

Exotic Disease News

Diagnostic expertise for BSE

Peter Hooper from the Australian Animal Health Laboratory and Rod Reece from the Elizabeth MacArthur Agricultural Institute were funded to travel to England for specialist training in the diagnosis of bovine spongiform encephalopathy. Pathology workshops with Gerald Wells from Weybridge will be held in Victoria and Queensland in late November.

National Disaster Conference

As part of the United Nations' International Decade of Natural Disaster Reduction, Australia hosted an international conference on disaster reduction. The Animal Diseases/Incidents Section was invited to provide one of the key addresses. The paper covered the history of animal disease disasters, the current strategies for handling an exotic disease incursion, and the advantages and limitations of treating an outbreak in a similar manner to any other natural disaster. A copy of the paper presented can be obtained from Chris Bunn.

AUSVETPLAN activities

Consultations with industry and others have been held to progress distribution and discussion of the AUSVETPLAN enterprise manuals. A meeting has been held with quarantine managers, executives from the feedlots association, and poultry industry. A document that combines key features from the summary document and the poultry manual is being developed for widespread distribution.

A two-day meeting finalising the Japanese encephalitis AUSVETPLAN was held in Melbourne. Further discussions are to be held with health authorities before this document is finalised. Revision of the bluetongue document has also commenced.

Contributed by: Chris Bunn, Animal Diseases/Incidents Section, DPIE

NAHIS web site

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

This newsletter is also available on the NAHIS web site. The site is being developed to provide information and statistics about animal health matters in Australia.

Quarterly Disease Statistics

Laboratory testing

Testing for enzootic bovine leucosis (EBL) in beef cattle in northern Queensland over the last two quarters has been at a higher rate as part of that State's structured surveillance activities, with the sampling biased toward beef herds with some serological history of EBL. The results of serological testing from routine laboratory submissions for the quarter are shown in Table 3.

Table 3: Serological testing from routine submissions to State laboratories

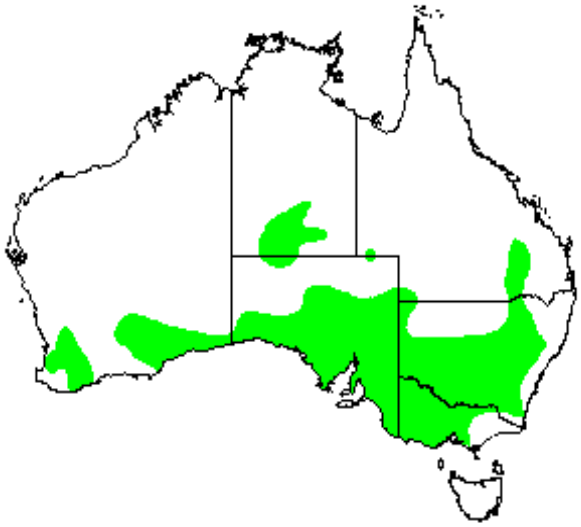
	Akabane		Bluetongue		Bovine ephemeral fever		Enzootic bovine leucosis		Equine infectious anaemia		Equine viral arteritis	
	Tests	+ve	Tests	+ve	Tests	+ve	Tests	+ve	Tests	+ve	Tests	+ve
Jul - Sep 95	333	71	3106	277	859	256	5338	68	273	1	182	2
Oct - Dec 95	502	94	4298	259	1094	223	5922	63	617	1	336	4
Jan - Mar 96	1035	381	5502	261	1662	538	2193	41	345	0	271	3
Apr - Jun 96	980	177	6521	404	1506	461	9710	68	313	1	172	1
Jul - Sep 96	519	97	10000	90	1155	335	7875	73	324	2	173	6
NSW	38	5	782	14	39	4	924	22	3	0	2	1
NT	126	52	410	25	283	42	3153	24	9	0	0	0
QLD	207	24	4903	51	648	283	2799	27	80	2	10	0
SA	43	0	3724	0	43	0	6	0	11	0	7	0
TAS	1	0	10	0	0	0	206	0	0	0	0	0
VIC	26	0	140	0	74	0	0	0	181	0	129	5
WA	78	16	31	0	68	6	787	0	40	0	25	0

Control activity

Rabbit calicivirus

During the quarter, rabbit calicivirus (RCV) continued to spread. Figure 2 shows the probable extent of spread at 30 September based on reports from various State and Territory Vertebrate Pest agencies. Studies during the quarter reaffirmed the specificity of the virus to rabbits and allayed concerns regarding the potential for RCV to affect humans. The release of RCV as a biological control agent commenced in early October.

Figure 2: The extent of rabbit calicivirus at 30 September 1996



Tuberculosis

Table 4 summarises the results of the National Granuloma Submission Program. In the quarter to 30 September 1166 granulomas were submitted with one case of TB detected in a submission collected in the Northern Territory.

Table 4: Results of the National Granuloma Submission Program

	Stock Inspected	Granulomas Submitted	TB +ve
Jul - Sep 95	1 680 178	771	3
Oct - Dec 95	1 399 165	864	5
Jan - Mar 96	1 406 684	803	7
Apr - Jun 96	1 504 270	1004	0
Jul - Sep 96	1 485 625	1166	1
NSW	522 950	388	0
NT	23 849	19	1
QLD	547 198	406	0
SA	44 773	12	0
TAS	39 038	48	0
VIC	262 005	85	0
WA	45 812	208	0

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. One sample that gave a positive titre to the complement fixation test is currently being cultured at Oonoonba Veterinary Laboratory but is highly unlikely to be *Brucella abortus*. The Northern Territory report also mentions a false positive reaction detected at routine export inspection.

A total of 247 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 5.

Table 5: Surveillance for bovine brucellosis

	Abortion Investigations		Test for other reasons	
	Tests	+ve	Tests	+ve
Jul - Sep 95	309	0	2335	0
Oct - Dec 95	134	0	2154	0
Jan - Mar 96	85	0	1416	0
Apr - Jun 96	196	0	5593	0
Jul - Sep 96	247	0	4228	1
NSW	105	0	276	0
NT	0	0	1172	0
QLD	90	0	2155	1
SA	3	0	39	0
TAS	14	0	117	0
VIC	1	0	166	0
WA	34	0	303	0

Enzotic bovine leucosis

EBL accreditation programs have been operating in the dairy industries in Queensland and NSW for several years. Victoria, SA, WA and Tasmania are all undertaking a program of bulk milk testing of all dairy herds.

Table 6: Dairy herds tested free of EBL at 30 September 1996

NSW	NT	QLD	SA	TAS	VIC	WA	AUST
1363	0	1480	731	718	0	455	4747

Johne's disease

In Australia, JD is seen primarily in dairy cattle. It occurs occasionally in beef cattle, sheep and dairy goats, and in 1993 was diagnosed in a small number of alpacas. The disease is notifiable and subject to compulsory government controls, including quarantine and movement restrictions. Recently ovine Johne's disease has been recognised as a separate entity.

JD occurs mainly in Victoria, Tasmania and NSW. Victoria has a large number of infected herds, mainly dairy. NSW, Tasmania and South Australia also have a number of known infected herds. Surveillance programs in Queensland and Western Australia support the view that these States are free of JD, and active measures are taken to stamp-out any incursions. (See Queensland State report.) Table 7 shows the number of herds/flocks known or suspected to be infected.

Table 7: Herds/flocks with Johne's disease at 30 September 1996

	Cattle	Sheep	Goats	Alpacas	Total
NSW	186	129	2	0	317
NT	1	0	0	0	1
QLD					free
SA	27	0	0	0	27
TAS	25	7	4	0	36
VIC	1611	19	0	6	1636
WA					free
AUST	1850	155	6	6	2017

Ovine brucellosis

Accreditation programs for ovine brucellosis freedom are operating in most States. Table 8 shows the number of accredited flocks at the end of the quarter.

Table 8: Ovine brucellosis accredited free flocks at 30 September 1996

NSW	NT	QLD	SA	TAS	VIC	WA	AUST
1300	0	63	490	156	780	86	2875

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 the 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 the NSSS. Table 9 summarises *Salmonella* isolations from animals, notified to the NSSS for the quarter.

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

Table 9: Salmonella notifications, 1 July to 30 September 1996

	NSW	NT	QLD	SA	TAS	VIC	WA	AUST
Cattle	9	1	2	8	45	28	0	93
Sheep/goats	1	0	0	0	0	0	4	5
Pig	1	0	0	2	0	0	0	3
Horse	0	0	0	1	0	6	0	7
Poultry/avian	0	0	0	2	2	1	2	7
Dogs/cats	1	0	4	1	1	10	3	20
Other	3	1	8	8	1	10	0	31
Total	15	2	14	22	49	55	9	166

National Residue Survey

The National Residue Survey (NRS) has tightened the processing time required of laboratories, and it should be possible to include results for the current, rather than the previous, reporting quarter in future reports. Table 10 summarises the results for the quarter.

Contributed by: National Residue Survey, Bureau of Resource Sciences

Table 10: National Residue Survey, 1 July to 30 September 1996
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																
Beef	164	0	8	0	188	0	11	0	8	0	210	0	19	0	608	0
Sheep	31	0	0	0	4	0	8	0	1	0	11	0	8	0	63	0
Pork	116	0	0	0	84	1	30	0	2	0	123	13	45	0	400	14
Poultry	28	0	0	0	37	0	15	0	0	0	76	0	10	0	166	0
Other	13	0	0	0	20	0	17	0	0	0	7	0	3	0	60	0
Total	352	0	8	0	333	1	81	0	11	0	427	13	85	0	1297	14
Anthelmithics																
Beef	93	0	3	0	123	0	6	0	4	0	54	0	16	0	299	0
Sheep	100	0	0	0	10	0	17	0	5	0	63	0	40	0	235	0
Pork	25	0	0	0	24	0	3	0	0	0	16	0	8	0	76	0
Total	218	0	3	0	157	0	26	0	9	0	133	0	64	0	610	0
Growth promotants																
Beef	126	0	8	0	139	0	10	0	12	0	65	0	22	0	382	0
Sheep	92	0	0	0	21	0	18	0	2	0	46	0	30	0	209	0
Pork	8	0	0	0	2	0	0	0	0	0	5	0	2	0	17	0
Poultry	3	0	0	0	0	0	0	0	0	0	1	0	2	0	6	0
Other	0	0	0	0	9	0	14	0	0	0	1	0	2	0	26	0
Total	229	0	8	0	171	0	42	0	14	0	118	0	58	0	640	0
Insecticides																
Beef	358	0	28	0	466	0	27	0	25	0	217	0	53	0	1174	0
Sheep	291	1	0	0	29	0	45	0	8	0	126	0	85	0	584	1
Pork	70	0	0	0	39	0	15	0	5	0	53	0	16	0	198	0
Poultry	7	0	0	0	4	0	2	0	0	0	20	0	3	0	36	0
Other	54	0	0	0	43	0	28	0	0	0	8	0	12	0	145	0
Total	780	1	28	0	581	0	117	0	38	0	424	0	169	0	2137	1
Metals																
Beef	24	2	0	0	31	2	5	0	3	0	11	0	3	0	77	4
Sheep	24	0	0	0	2	0	5	1	1	0	14	0	14	0	60	1
Pork	15	0	0	0	6	1	5	0	0	0	7	0	5	0	38	1
Poultry	5	0	0	0	2	0	2	0	0	0	5	0	0	0	14	0
Total	68	2	0	0	41	3	17	1	4	0	37	0	22	0	189	6

Zoonoses

The Communicable Diseases Network Australia New Zealand – National Notifiable Diseases Surveillance System collects statistics about many human diseases. Table 11 summarises some of the information for zoonoses. Q fever continues to be the most commonly notified zoonosis, followed by leptospirosis and ornithosis.

Contact: Communicable Diseases Intelligence, Department of Family Services and Health

Table 11: Notifications of zoonotic diseases in humans

Disease	Q3-95	Q4-95	Q1-96	Q2-96	Q3-96	Current quarter							
	Australia				AUST	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Brucellosis	2	9	9	10	8	0	0	0	7	0	0	0	1
Hydatidosis	11	14	11	12	9	2	2	0	2	0	2	1	0
Leptospiros	37	48	64	65	44	0	3	0	31	0	0	10	0
Listeriosis	11	11	16	15	23	0	5	0	2	8	1	7	0
Ornithosis	27	83	27	24	12	0	0	0	3	2	0	7	0
Q fever	118	123	122	135	140	0	82	0	36	1	0	16	5

Suspect Exotic Disease Investigations

There were 16 exotic disease investigations reported during the quarter as shown in Table 12. None was found to be positive for the disease suspected.

Table 12: Exotic disease investigations, 1 July to 30 September 1996

Suspected disease	Species	State	Reponse (key below)	Finding
Bluetongue	ovine	NSW	2	photosensitisation
Swine vesicular disease	bovine	NSW	2	excluded
Equine morbillivirus	equine	NSW	3	toxic myocardial necrosis
Equine morbillivirus	equine	NSW	3	excluded
Newcastle disease	poultry	QLD	2	excluded
Equine morbillivirus	equine	QLD	3	bacterial pneumonia
Equine morbillivirus	equine	QLD	3	excluded
Equine morbillivirus	equine	QLD	3	excluded
Equine morbillivirus	equine	QLD	3	excluded
Equine morbillivirus	equine	TAS	3	excluded
Rabies	canine	TAS	3	degenerative brain disease
Bovine spongiform encephalopathy	bovine	VIC	1	metabolic disorder
Bluetongue	ovine	WA	2	excluded
Classical swine fever	suis	WA	2	excluded
Foot-and-mouth disease	camelid	WA	3	excluded
Maedi-visna	ovine	WA	2	excluded

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)
6 Alert or standby

NAHIS contributors

Name	Organisation	Phone	Fax	e-mail
Chris **Baldock**	NAHIS Program Manager	07 3379 5385	07 3278 1953	ausvet@eis.net.au
Peter **Black**	Qld State Coordinator	079 360 270	079 361 753	blackp@dpi.qld.gov.au
Chris **Bunn**	Animal Diseases/ Incidents, DPIE	06 272 5540	06 272 3372	chris.bunn@dpie.gov.au
Kim **Critchley**	SA State Coordinator	08 8207 7908	08 8207 7852	critchley.kim@pi.sa.gov.au
John **Elliott**	Tas. State Coordinator	03 6336 5334	03 6336 5374	
John **Galvin**	Vic. State Coordinator	054 304 517	054 304 505	galvinj@goldy.agvic.gov.au
Graeme **Garner**	BRS, NAHIS Coordinator	06 272 5369	06 272 4533	mgg@mailpc.brs.gov.au
Ana **Herceg**	Communicable Diseases Intelligence	06 289 1555	06 289 7791	http://www.health.gov.au
Diane **Lightfoot**	National Salmonella Reference Laboratory	03 9344 5701	03 9344 7833	
Bill **Matthews**	National Granuloma Submission Program, AQIS	06 272 5042	06 272 3307	william.matthews@dpie.gov.au
Terry **Nicholls**	National Residue Survey, BRS	06 272 4549	06 272 4023	tjn@mailpc.brs.gov.au
Richard **Norris**	WA State Coordinator	09 368 3637	09 367 6248	richardn@aidpo.agric.wa.gov.au
Diana **Pinch**	NT Coordinator	08 8999 2354	08 8999 2024	diana.pinch@dpif.nt.gov.au
Evan **Sergeant**	NSW State Coordinator	063 913 687	063 619 976	Evan.Sergeant@smtpgwy.agric.nsw.gov.au
Peter **Thornber**	Office of the Aust. CVO, DPIE	06 271 6343	06 272 5697	peter.thornber@dpie.gov.au
David **Wilson**	AQIS Policy	06 272 4562	06 272 3399	david.wilson@dpie.gov.au