ANIMAL HEALTH SURVEILLANCE QUARTERLY

Newsletter of Australia's National Animal Health Information System

Volume 1 Issue 2

Quarterly Report for 1 April to 30 June 1996

This edition 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 1 April to 30 June 1996. Summary data are collated from a variety of sources, including State Departments of Agriculture, the Australian Quarantine and Inspection Service (AQIS), the National Arbovirus Monitoring Program, the National Residue Survey, the Commonwealth Department of Health and Family Services, the Northern Australia Quarantine Strategy and various national reference laboratories. Only summary data are recorded in NAHIS, with detailed data being maintained by the source organisation.

The data included in this report are accurate at the time of publication. However, because of the short reporting and production time, minor discrepancies may occur.

This issue includes a special review article on the new Johne's Disease Market Assurance Program, 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.

Future issues of AHSQ will be available on the internet through a NAHIS world wide web site that is currently under development.

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

GARDNER MURRAY
Australian Chief Veterinary Officer

Common abbreviations and acronyms used

1. Species

bov cattle *cap* goats *cer* deer *alp* alpaca
ovi sheep *sui* pigs *avi* avian *pou* poultry

2. Diseases

JD Johne's disease *TB* tuberculosis
EBL enzootic bovine leucosis
RCD rabbit calicivirus *EMV* equine morbillivirus
BSE bovine spongiform encephalopathy
EHV equine herpesvirus

3. Other

AAHL Australian Animal Health Laboratory
RVL Regional Veterinary Laboratory

REVIEW ARTICLE:

The National Johne's Disease Market Assurance Program

In May 1996, Australia embarked on a National Johne's Disease Market Assurance Program for the cattle industries. This is a core component of a broader program to help control the spread and reduce the impact of Johne's disease (JD) on Australia's livestock industries.

JD is a notifiable disease in all States and Territories, but currently there are strong commercial and social disincentives for breeders, and particularly stud producers, to report JD in their herds. The Market Assurance Program provides a way to identify low risk herds, and for infected herds to demonstrate progress towards eradication.

Combined with management practices to reduce the risk of introducing JD, a program of repeatedly testing large numbers of cattle in a herd has a high probability of detecting infection and provides a sound basis for assuring that it has a low risk of being infected. The Program is not an eradication scheme. It is a way of identifying low risk herds. Cattle producers will be able to source cattle from assessed herds, and market forces should progressively encourage breeding herds to enrol in the program.

For infected herds, it provides a way to improve their status. Many infected herds will move into the Program once JD has been controlled and high risk animals have been removed. It is anticipated that access to markets and premiums

In this Issue

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

for cattle from assessed herds should ultimately drive the program. Breed societies and shows may also promote its adoption by only accepting stock from herds with an assessed status. JD is not known to occur naturally in WA, NT and Qld and it is likely that an assessed status will be required for movements to these areas in the future.

The National Johne's Disease Coordinating Committee, established by the National Farmers' Federation in 1995 has endorsed the Market Assurance Program. The Meat Research Corporation and the Dairy Research and Development Corporation have funded training of veterinarians, an extension and communication program, and the appointment of a national JD program coordinator. Research priorities have been identified and are being funded. Standard Definitions and Rules are being developed for zoning, disease control and livestock movements. The *Australian Standard Diagnostic Techniques for Johne's Disease* will be published soon. Disease control programs are also being undertaken in infected herds in some States.

Herd Management

Under the program, a herd is defined as a group of susceptible animals managed as a separate and discrete unit without physical contact with other groups of susceptible species. Goats, alpaca and deer are all defined as eligible species under the Program. All cattle and other eligible species grazed together or, at any time during any 12 month period, on the same area of a property or farm, are considered to belong to the same herd. As JD in cattle and sheep are distinct infections, sheep are not eligible species under the cattle program. Market assurance rules are also being developed for alpaca, and being considered for goats.

Other requirements are that cattle must be individually identified, introductions can only be from herds of the same or higher status, and fences must be secure.

Making Progress

An initial herd status will be assigned by the respective State or Territory Chief Veterinary Officer (CVO). Herds in which there has been no evidence of infection will start as Non-Assessed (NA). Where there has been evidence of infection or contact with infection in the past, the CVO may initially classify a herd as Suspect (SU) or Infected (IN). Where a new herd is assembled from other herds of cattle, it will adopt the status of the originating herd with the lowest status defined under this program. If the status is not known, the new herd cannot enter the program for 12 months after it is established and it will be given the status NA.

In setting initial herd status, CVOs will examine evidence of recent herd testing and management controls equivalent to those described in this program with a view to accelerated entry of herds into the program.

A cattle owner wishing to achieve a high status as quickly as possible can progress to a Tested Negative 1 (TN1) status after a negative herd test. A herd test requires serological testing of all cattle over two years of age. A second negative herd test carried out a year later brings a herd up to TN2. TN3 can be achieved after a further clean herd test two years later. The higher the status the greater the assurance of freedom from Johne's disease. Progression of herds beyond TN3 will be resolved in a future review of the program when concepts of accredited or confirmed freedom may be considered.

Progression of SU herds to TN1 can only occur with the approval of the CVO and after a negative herd test. All high risk animals will have to be removed from the herd before the CVO will approve progression to TN1. The SU status may also be applied to herds enrolled in the Program where conditions contained in the agreement are not followed.

An infected herd can progress to SU status after a successful disease control program and at least one negative herd test. The CVO can maintain a herd status as SU while it still contains cattle that are considered to be at high risk of being infected

As an alternative to testing *all* cattle, owners of large herds may choose to progress using a Monitored Negative 1 (MN1) status, based on testing of a *sample* of older animals in the herd (4 years and over). Such animals could, for example, be cattle selected for culling. A status of MN1 can be progressed to MN2 and MN3 by further sample testing every two years. The size of the sample to be tested is calculated to detect a prevalence of 2% infection with 95% confidence in this group, and requires between 170 and 250 animals depending on the size of the herd.

Maintaining Herd Status

Herds in the Program must maintain the schedule of testing, comply with the management requirements of the program and ensure that animals introduced are only from herds of the same or higher status. Where a herd does not proceed with its next scheduled herd test within the required time, the status will revert to the next lowest status. In the case of TN or MN herds, the approved veterinarian may re-certify this lower herd status, without further testing, for up to three years if all other requirements of the Program are satisfied. This does not apply to TN1 herds with a previous history of infection. A herd will regain its previous status when it next undergoes testing.

Where animals are introduced from a herd of lower status, the herd will revert to that lower status. The owner must retain sufficient documentation to verify the status of the herd of origin of any introductions.

Quality Control

Enrolment in the Program is voluntary, and most of the costs will be borne by producers. As a national scheme, quality control and consistency in operation are essential to protect the cattle owners' investment and to assure clients of the value of an assessed status.

Veterinarians who want to participate in the scheme undergo a training program to become approved. An owner will enter an agreement with an approved veterinarian that sets out mutual responsibilities under the Program. Approved veterinarians must ensure that an individual herd program is developed to suit the particular circumstances of each producer. They also advise on and assess management practices, carry out testing, interpret results, assign herd status and issue certificates.

As the screening test for the program may return a small proportion of false positive reactors, a herd or sample test is not completed until all serological reactors are followed-up to confirm the herd's status. Where there has been no evidence or suspicion of infection, faecal culture may be carried out within a month of testing. In herds with a previous history or suspicion of infection, reactors at the initial herd test must be post-mortemed and a standard set of tissues cultured and examined histologically. Reactors are also slaughtered at subsequent herd tests in previously infected herds. The herd status does not change until follow-up testing is completed. Where all reactors are not followed-up correctly, the test is incomplete, the herd status cannot progress, and may revert to Suspect.

The reputation of the Program hinges on confidence in test results and their interpretation. The *Australian Standard Diagnostic Techniques for Johne's Disease* sets out the rules for tests, including histopathological and cultural procedures. Veterinary laboratories must also be approved to carry out testing for the Program.

The Program will be audited to ensure confidence in the low risk status of assessed herds. The primary audit will be a herd audit to verify the official herd status. Audits of approved veterinarians and of the State authorities will also be undertaken. The performance of approved laboratories will be monitored by State authorities through their laboratory quality control program.

Vendor Declarations

Signed vendor or owner declarations about the assessed status of a herd should be used for any movement or sale of cattle where the buyer or person receiving the cattle wants an assurance about their status. A model form is included in the Program. Declarations already have a high value under common law and fair trading legislation, and their use will be encouraged by specific animal health legislation in some States and Territories.

Conclusion

The National Johne's Disease Market Assurance Program was developed by an Animal Health Committee Working Party, with representation from the cattle industries, government and the veterinary profession. It provides an opportunity for Australian cattle producers to adopt measures that will greatly help to reduce spread of Johne's disease. The Program uses the best knowledge about the disease, and the best available diagnostic methods to identify herds with a low risk of infection. Its performance will be monitored and it will improve with experience and advances in diagnostic technology.

Contributed by: David Kennedy National Coordinator, National Johne's Disease Market Assurance Program

QUARTERLY HIGHLIGHTS

Lyssavirus encephalitis in the black flying fox (*Pteropus alecto*)

In May 1996, a sick five month old black flying fox (*Pteropus alecto*) was submitted to the Regional Veterinary Laboratory (RVL) at Wollongbar, in northern New South Wales, as part of a screening program for morbillivirus infections in fruit bats. Pathological examination showed a non-suppurative encephalitis. Formalin fixed tissues were referred to the Australian Animal Health Laboratory (AAHL) for immunohistochemical testing to exclude equine morbillivirus and rabies. Morbillivirus was excluded, but positive reactions to a lyssavirus monoclonal antibody were observed in the brain and some gastrointestinal nerve plexuses. Fresh brain was not available, but lyssavirus was subsequently recovered from fresh kidney tissues that had been stored for morbillivirus screening. RVL staff examined archival material and referred a further 5 cases with evidence of central nervous system lesions to AAHL. Brain from one of these cases, also a juvenile black flying fox, gave a positive result with the lyssavirus specific monoclonal antibody. This animal, submitted to the RVL in April 1995 after showing behavioural changes characterised by increased aggression, had a mild encephalitis with many cytoplasmic inclusions in neurones.

Currently there are six recognised serotypes/genotypes within the lyssavirus genus. The classical rabies viruses causing endemic/epidemic disease in terrestrial mammals constitute serotype 1. The other serotypes are Lagos bat virus (serotype 2), Mokolavirus (serotype 3), Duvenhage (serotype 4), European bat lyssavirus 1 (serotype 5) and European bat lyssavirus 2 (serotype 6). Viruses from all serotypes, with the exception of Lagos bat virus, have caused fatal illnesses in man. Preliminary antibody studies at AAHL, using monoclonal antibody reactivity profiles and gene sequence information, indicate that this lyssavirus isolate is not classical rabies virus.

The virus will be designated Ballina fruit bat lyssavirus (BFBLV) until further work is done to determine its relationship with known bat lyssaviruses, or indeed, if it is a new serotype/genotype. Genome sequence analysis will continue at AAHL, and the virus has also be sent to the Centers for Disease Control, Atlanta, for biotyping by more extensive monoclonal antibody reactivity analysis, and also for mouse protection tests using conventional rabies virus vaccines.

Contributed by: Graeme Fraser, RVL, Wollongbar, and Lawrence Gleeson and Peter Hooper, AAHL.

Equine herpes virus type 1 abortions

The Centre for Equine Virology is a national centre for diagnosis and research for viral diseases of horses. The following information on testing carried out for equine herpes virus type 1 (EHV1) abortions comes from the Centre's 1995 Annual Report.

During 1995, tissue samples were received from 93 aborted foetuses (Table 1), with EHV1 confirmed as the cause of abortion in only 2, both from Vic. This was a far more pleasing year than 1994 in which more than 80 EHV1 abortions were confirmed by virus isolation.

Table 1: Tissue samples from aborted foetuses submitted for EHV1 isolation during 1995.

State	No. samples (No. pos.)
NSW	38 (0)
Tas.	1 (0)
Vic	54 (2)
Total	93 (2)

During the same period, 573 serum samples were submitted for serology for EHV1 (Table 2). The majority of these samples were tested to identify antibody positive mares that would be carriers of EHV1, and potential index cases in outbreaks of abortion. EHV1 carrier mares occur in all populations at a prevalence of 30-50%. No farm could be expected not to have EHV1 carrier mares. The results are used to run a two–herd system on studs and the lower incidence of abortion in 1995 is related to this use of the test. Other serum samples were submitted for testing, usually as paired samples, to confirm or rule out a diagnosis of EHV1 abortion.

Table 2: Serum samples submitted for EHV1 specific ELISA testing in 1995, by State.

State	NSW	Qld	SA	Tas.	Vic.	WA	Total
No.	265	2	77	2	226	1	573

New South Wales

Rabbit calicivirus

Rabbit calicivirus disease (RCD) has now been confirmed in twenty Rural Lands Protection Board districts in New South Wales, comprising about half the State. The confirmed outer points of the distribu-

tion are Broken Hill, Cobar, Coonamble, Coonabarabran, Mudgee, Bathurst, Cooma and along the Murray River from west of Tocumwal to the South Australian border. Cases have also been confirmed in the Australian Capital Territory.

Suspect bluetongue investigation

In early May, bluetongue was considered as a possible cause of coronitis, lower limb oedema, swelling about the lips, ears and/or face, haemorrhage, and a 10% mortality rate in weaner sheep in the north of the State. Samples submitted to AAHL and the Elizabeth Macarthur Agricultural Institute at Camden excluded bluetongue. The problem is believed to be a photosensitisation due to eating *Panicum* species (panic grasses).

Avian influenza investigation in turkeys

The possibility of avian influenza was investigated on a Wagga Wagga farm, where 60% of mixed age turkeys died. Clinical signs included depression, pallor and recumbency. Post mortem examination showed lung, myocardial, liver and splenic congestion, and occasional epicardial ecchymoses. *Pasteurella multocida* was isolated at Wagga Wagga Regional Veterinary Laboratory, with avian influenza being excluded. Antibiotic sensitivity testing allowed effective treatment of remaining birds. Losses, including disposal of dead birds, were estimated to be about $80 000.

Cattle tick infestation

During May, a cattle tick infestation was diagnosed on a horse in the southern NSW. The affected horse was originally from Queensland, and had been treated for ticks prior to entering NSW. The horse is thought to have become re-infested from a contaminated horse rug. The infestation was eradicated, and there was no evidence of spread to in-contact animals.

Anthrax

Anthrax was confirmed in one cattle herd at Condobolin during the quarter, some weeks after the cattle were reported to have been vaccinated.

Emu deaths

Health problems are becoming increasingly important in the emerging emu industry. *Erysipelothrix rhusiopathiae* was isolated from affected birds in one flock mortality incident, where emus were dying with signs of septicaemia.

In a second flock, birds had clinical signs of illthrift, thickened skin, slight incoordination, leg tremor, and generalised myopathy. These birds had been fed a high fat ration, and vitamin E deficiency was suspected, analogous to mulberry heart disease in pigs.

Contributed by: Greg Curran, NSW Agriculture

Northern Territory

Rabbit calicivirus disease

This disease was first diagnosed in the Northern Territory on a property in the Alice Springs region at the end of May. The extent of spread and effect on the rabbit population will be monitored over the next few months.

Botulism

Results from investigations on a property in the Tennant Creek district clearly identified a phosphorus deficiency problem, and thus susceptibility of the herd to botulism. Antibody testing indicated an inadequate vaccination program, and the occurrence of field challenge with Type C botulism. Information such as this emphasises the resources needed for good herd management.

Contributed by: Diana Pinch, NT DPIF

Queensland

Cattle diseases

Due to the very mild winter up to the end of June, insect activity continued in many parts of Queensland. Consequently, clinical bovine ephemeral fever has lingered on for longer than normal. In northern Queensland, late cases seemed to be associated with proximity to large man made dams. As expected in the mild conditions, there have been increased detections of babesiosis and anaplasmosis in both beef and dairy herds. The previous dry seasons have resulted in low exposure rates to tick fever organisms, increasing the proportion of the population which is susceptible. Botulism was diagnosed as the cause of deaths on a number of properties and suspected as the cause of deaths in one dairy herd. Cryptosporidiosis was diagnosed in calves on four properties in coastal southern Queensland.

A number of neurological conditions have been investigated as part of a Targeted Diagnostics project. Conditions diagnosed to date include osteomyelitis caused by *Actinomyces pyogenes* in cattle less than 12 months of age, lead poisoning, and a nervous condition believed to have a genetic basis.

Horse diseases

As a result of good growth of buffel dominated pastures in some areas of central Queensland, there has been an increased incidence of osteodystrophia fibrosa during the quarter.

Following a history of sickness, three of five horses bled in north-western Queensland had very high titres to Ross River fever virus, suggesting infection during the recent wet season.

Contributed by: Peter Black, Queensland DPI

South Australia

Major tuna mortality

During April, there were major mortalities in caged tuna at Port Lincoln, coinciding with a period of extremely strong wind and rough sea conditions. Investigators reported heavy turbidity in the pens. Pathology in the fish was limited to the gills, which showed hypoplasia of the epithelium, fusion of lamellae with haemorrhage, and many silt particles adherent to the surface.

It was concluded that the rough weather stirred up bottom sediment, exacerbating an already marginal situation. Tuna are surface feeders and become very active at feeding time. This, combined with high stocking rates and the heavy organic load in the water, may have produced an oxygen deficit, compounded by the already damaged gills.

Encephalitis in lambs

During the quarter, an unusual neurological problem in lambs was investigated. Approximately 20 individuals in a flock of two week old lambs suffered a slow, ascending paresis eventually resulting in death. Clinically, the lambs had a nasal discharge and a normal patella reflex but were unable to stand. The only finding after post mortem, virological, bacteriological and histological examination was a non-suppurative encephalitis. One of six lambs tested was positive to a fluorescent antibody test on brain section for *Chlamydia trachomatis,* but this was not confirmed by further testing.

Johne's disease of sheep

During the quarter, NSW notified the finding of JD in a sheep flock which had exported rams to SA over a number of years prior to the disease being diagnosed. The destination properties were visited and the history of the imported animals determined. Many had already died or been slaughtered. One live animal was killed and specimens taken for histology (no evidence of JD) and culture. Another property refused consent to kill an imported animal, so movement restrictions have been placed on the property until the animal can be examined.

Rabbit calicivirus disease

The major initial outbreak, following the escape of the virus from Wardang Island onto the mainland in late 1995, was through the Flinders Ranges and the pastoral country to the south east and east of the ranges. Since then the virus has spread as far as Innamincka in the far north east, and to Penola in the south east. The virus has also been detected in the outer northern suburbs of Adelaide.

After a small initial focus on Eyre Peninsula and a case detected from the top of the Great Australian Bight, there have been no further reports from these areas and there appears to have been no spread south on Yorke Peninsula, the site of the original outbreak. The virus has not been found on the Fleurie Peninsula and neighbouring areas south of Adelaide.

Veterinary Laboratory changes

The SA Government is to seek proposals from commercial suppliers to deliver core diagnostic services from the Glenside VetLab laboratory through a competitive management contract. Vetlab is to continue as a governmant laboratory, delivering essential servives including disease surveillance and control necessary to protect SA's livestock industries and their markets.

Contributed by: Kim Critchley, Primary Industries SA

Tasmania

Suspect exotic disease investigation

On 18 June 1996, lumpy skin disease was suspected on one property, following laboratory submissions from a private practitioner. A field investigation suggested that this disease was not likely to be the cause, and specimens sent to AAHL were negative.

Ovine Johne's disease

JD was diagnosed in a sheep submitted to the laboratory as part of an illthrift investigation. At the end of the quarter, infection had also been found on two neighbouring properties as a result of follow-up investigations. Property histories suggest that infection has been in at least one flock for

about eight years.

Contributed by: John Elliot, DPIF, Tasmania

Victoria

Ovine Johne's disease

Apart from a single case of JD diagnosed in one sheep introduced from New Zealand via Flinders Island in 1989, the first evidence of this disease in sheep in Victoria was in several commercial flocks in east Gippsland in December 1995. Movements of sheep into and out of infected flocks have been traced to identify the source and likely spread of infection. Owners of infected flocks also entered into formal agreement with Agriculture Victoria, in which they undertake action to limit the spread of disease to other flocks, especially that sheep only leave the property direct for slaughter at an abattoir. At the end of June, Johne's disease had been confirmed in ten flocks, including seven in one area of east Gippsland and two that had introduced sheep from NSW flocks where the disease has since been diagnosed.

Bovine ephemeral fever

In April, it was reported that cattle on four properties in north-east Victoria had shown signs consistent with bovine ephemeral fever some 3–4 weeks earlier. Affected cattle went down, were disinclined to move and recovered within 3–4 days without other signs. Serological testing confirmed that the cattle had been exposed to ephemeral fever virus. No further reports suggestive of ephemeral fever were received from the Goulburn or Murray Valleys in Victoria. It is believed that infected mosquitoes were blown in from several hundred kilometres north of the area.

Rabbit calicivirus disease

RCD was first detected in Victoria in February 1996, in the central part of the State. Since that time testing has been undertaken to establish the distribution and spread of the disease. By the end of June, it had been confirmed across a large area of central and western Victoria.

Tuberculosis in buffalo

Advice was received from the NT Department of Primary Industry and Fisheries that buffalo from a herd in which tuberculosis (TB) had recently been confirmed were introduced into Victoria in February 1996. A total of 14 buffalo were introduced, including eight from the group in which TB was detected in the NT. Slaughter of the eight highest risk buffalo found TB in five of them, with *Mycobacterium bovis* isolated. The remaining six buffalo were slaughtered, with no visible lesions of TB detected.

Porcine reproductive and respiratory syndrome investigation

A 300-sow piggery in northern Victoria reported problems, including increased pre-weaning mortalities, piglets born with normal body weight and vigour but fading and dying at about three days of age, increased incidence of coughing in sucker pigs, increased stillbirth rate and a slight increase in sow mortalities. Histopathology of piglet lung samples showed an unusual alveolitis. The changes were most likely secondary to systemic infection but the possibility of porcine reproductive and respiratory syndrome (PRRS) was considered. Further samples were collected for examination at the Australian Animal Health Laboratory, Geelong, where isolation and serology were negative for PRRS. It is believed that overcrowding and excessively dusty feed were key factors causing the problems.

Bovine spongiform encephalopathy investigations

Two cattle with unusual nervous signs of staggers (1) and seizures (1) were examined to exclude the possibility of BSE. In one case, examination of the brain showed cellular degeneration that was consistent with perennial rye grass staggers. In the second case, no significant brain changes were observed.

Contributed by: John Galvin, Agriculture Victoria

Western Australia

Rabbit calicivirus disease

RCD was confirmed as the cause of rabbit deaths near the South Australian border early in the quarter. As indicated by rabbit losses, the virus spread rapidly westwards over several hundred kilometres, reaching Kalgoorlie in June. There has been little further spread recently, probably because of the onset of colder weather.

Enzootic bovine leucosis

Enzootic bovine leucosis (EBL) has been identified in 3 dairy herds and 3 beef herds in the south west of Western Australia, as well as in some herds in the Kimberley. Bulk milk samples were tested from all dairy herds, followed by individual animal serology in test positive herds. Testing in beef herds in agricultural areas was carried out as part of the recent survey for Johne's disease. Less

than 6 infected animals were detected in the infected south west herds.

Western Australia has a policy to eradicate EBL from dairy herds, and will undertake further testing. Test positive animals will be slaughtered to confirm eradication.

Survey of alpacas for Johne's disease

Following industry consultation, a survey of alpacas has been commenced in Western Australia. The survey is part of a wider process aimed at gathering evidence to support the State's case for being declared a Johne's disease Free Zone.

Contributed by: Richard Norris, Agriculture WA

EXOTIC DISEASE NEWS

Comparing AUSVETPLAN with European Union Directives

Following bilateral discussions held between the European Union (EU) and AQIS, the question was raised whether Australia's veterinary emergency Plan (AUSVETPLAN) is equivalent to the EU Council Directives. These directives define the minimum control measures to be applied by Member States in the event of outbreaks of major diseases such as foot-and-mouth disease.

A comparative analysis has now been made, using a number of AUSVETPLAN documents and legislative examples. The report will soon be made available to the EU.

Overall AUSVETPLAN is more definitive and rigorous than the European policy. For example the EU establishes a protection zone of a minimum 3km radius and a surveillance zone of a minimum 10 km, while in Australia such areas would be more extensive.

New US Import Rule

The United States Department of Agriculture (USDA) is proposing new criteria for allowing or excluding importations of animals or animal products into the United States based on scientific risk assessments and animal disease regionalisation. Instead of declaring individual countries free of disease the changes would establish requirements according to regions. A region could be a number of countries, a part of one country, or an area that lies in more than one country.

The proposed regulations would use risk assessment procedures to determine what risk management will be used to reduce an unacceptable unmitigated risk to an acceptable level. The USDA has developed a prescribed set of six proposed classifications for use with import regulations. These categories range from 'negligible risk' to 'very high or unknown risk'.

In their proposed regionalisation criteria for ruminants and swine Australia has been inconsistently categorised on a number of occasions. Of particular concern is the apparent failure of the US to recognise our national arbovirus monitoring program, bovine brucellosis freedom and TB impending freedom. Australia is also being asked to prove that it is free from Aujeszky's disease and *Multiceps multiceps*.

A submission expressing Australia's concerns has been sent to USDA.

Training

Recently, through the initiative of AQIS Wagga Wagga area, a one and a half day exotic diseases workshop was held in Albury. AQIS veterinarians, senior meat inspectors, quality assurance and management personnel from domestic and export works in southeast NSW attended. The course covered disease identification, reporting systems, AUSVETPLAN, and problem solving exercises.

Neil Tweddle, from the Animal Diseases/Incidents Section also attended a workshop at the Australian Emergency Management Institute, Mt Macedon, Victoria to discuss interstate cooperation during emergencies.

ANEMIS (Australia's emergency management information system)

In May, Terry Thomas from Victoria was funded to attend a demonstration of EpiMan the New Zealand exotic disease information management system. He found that EpiMan is further developed than ANEMIS although it is similar in many ways. The expert system and the main database are essentially identical to those in ANEMIS, as is the tracing module. The epidemiological functions of EpiMan, while useful were not considered suited to Australian conditions. Terry's report is being circulated to members of the Exotic Diseases Subcommittee.

In Tasmania ANEMIS is currently being used to facilitate management of data and tracings associated with an outbreak of ovine Johne's disease.

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

QUARTERLY DISEASE STATISTICS

Tuberculosis

During the quarter, monitoring for TB continued under the National Granuloma Submission Program, with 960 granulomas submitted for investigation. No cases of TB were identified. Summary results from the program are presented in Table 3. For the year to date, 1751 granulomas have been examined with 7 positives found — one each in Qld, Vic and SA and four in NT.

Table 3: Results of the National Granuloma Submission Program, 1 April to 30 June

State	Stock inspected	Granulomas submitted	TB +ve
NSW	574734	237	0
NT	13143	28	0
Qld	557387	540	0
SA	56114	20	0
Tas.	42859	10	0
Vic.	219023	61	0
WA	37911	64	0
Aust.	1501171	960	0

Rabbit Calicivirus

During the quarter, rabbit calicivirus (RCV) continued to spread (see reports from NSW, NT, SA, Vic. and WA). Figure 1 shows the extent of spread of RCV as at 30 June 1996. Studies are currently underway to confirm the specificity of the virus to rabbits and to address concerns regarding the potential for RCV to affect humans. A decision on the deliberate release of RCV as a biological control agent is expected by Spring this year.

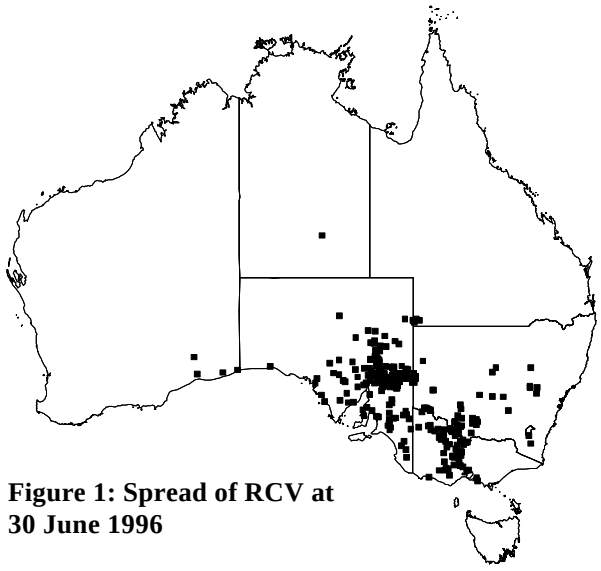


Figure 1: Spread of RCV at 30 June 1996

Laboratory testing

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

Table 4: Serology — Number of samples tested with number of positives in brackets

State	Bluetongue	Akabane	Bovine ephemeral fever	Equine viral arteritis	Equine infectious anaemia	Enzootic bovine leucosis	*B. abortus*
NSW	1310 (7)	128 (1)	240 (58)	27 (1)	21 (0)	924 (22)	441 (0)
NT	512 (255)	157 (86)	400 (211)	0 (0)	0 (0)	2196 (15)	2170 (0)
Qld	3934 (101)	322 (50)	474 (161)	43 (0)	83 (1)	1317 (31)	1625 (0)
SA	454 (0)	136 (0)	40 (0)	32 (0)	47 (0)	4640 (0)	249 (0)
Tas.	0 (0)	0 (0)	0 (0)	45 (0)	0 (0)	113 (0)	150 (0)
Vic.	0 (0)	122 (0)	227 (8)	45 (0)	83 (0)	0 (0)	380 (0)
WA	79 (41)	115 (40)	125 (23)	25 (0)	63 (0)	520 (0)	578 (0)
Total	6521 (404)	980 (177)	1506 (461)	172 (1)	297 (1)	9710 (68)	5593 (0)
This quarter 1995	2650 (101)	747 (157)	957 (77)	407 (0)	738 (0)	1328 (4)	1378 (0)
Year to date	12023 (665)	2015 (558)	3168 (999)	443 (4)	641 (1)	11510 (105)	7009 (0)

Control activities

Johne's disease

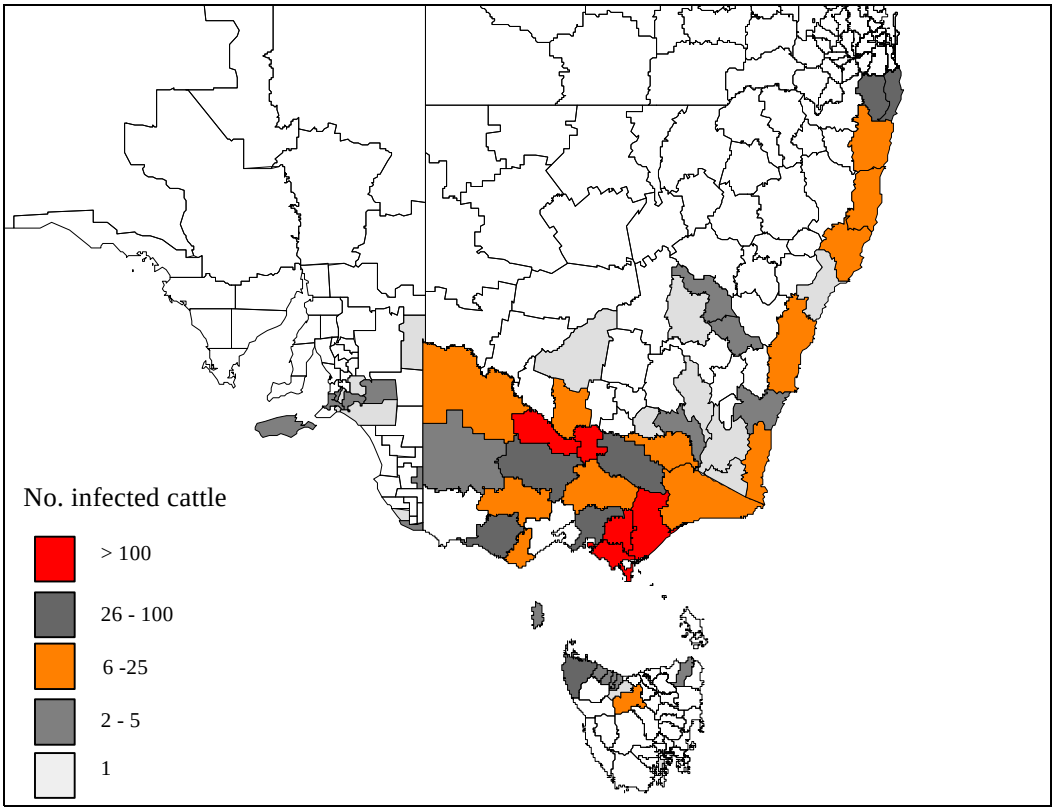
In Australia, JD is seen primarily in dairy cattle. It occurs occasionally in beef cattle, sheep and dairy goats, and in 1993 was diagnosed in a small number of alpacas. The disease is notifiable and subject to compulsory government controls, including quarantine and movement restrictions.

Table 5: JD-infected herds/flocks by State

State	alp	bov	cap	ovi	Total
NSW	0	186	2	124	312
NT	0	1	0	0	1
SA	0	27	0	0	27
Tas.	0	59	0	3	62
Vic	6	1546	0	10	1562
Aust.	6	1819	2	137	1964

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, Western Australia and the Northern Territory support the view that these States are free of JD, and active measures are taken to stamp-out any incursions. Table 5 shows the number of herds/flocks known or suspected to be infected by State. As discussed in the Review Article, a National Johne's Disease Market Assurance Program is being put in place. In future issues of *Animal Health Surveillance Quarterly*, it is hoped to provide regular updates on the status of herds enrolled in the program.

Figure 2: Johne's disease infected cattle herds by tailtag area, as at 30 June 1996



Enzotic bovine leucosis

EBL Accreditation programs have been operating in the dairy industries in Qld and NSW for several years. Vic., SA, WA and Tas. are all undertaking a program of bulk milk testing for all dairy herds. As at 30 June 1996 NSW, Qld and SA reported 1631, 1470 and 731 dairy herds respectively as being tested free of EBL.

Ovine brucellosis

Brucellosis Accreditation programs are operating in most States. Table 6 shows the number of accredited flocks in each State at the end of the quarter.

Table 6: Brucellosis Accredited Free Flocks

State	NSW	Qld	SA	Tas.	Vic.	WA	Total
Accredited flocks	1300	63	564	155	782	87	2951

National Residue Survey

Summary results from the National Residue Survey (NRS) for the period from 1 January to 31 March 1996 are shown in Table 7. Because of the the time necessary for collecting and collating test results, NRS data are reported one quarter behind the current reporting quarter.

Table 7: Residue surveillance Number of samples tested by chemical group and species. Number of samples above maximum residue limit (MRL) or maximum permitted concentration (MPC) shown in brackets.

Chemical group	NSW	NT	Qld	SA	Tas.	Vic.	WA	Australia
Antimicrobials								
bov	167 (0)	0 (0)	141 (0)	36 (0)	15 (0)	113 (0)	21 (0)	493 (0)
ovi	32 (0)	0 (0)	2 (0)	18 (0)	0 (0)	31 (0)	15 (0)	98 (0)
pou	0 (0)	0 (0)	14 (0)	9 (0)	0 (0)	12 (0)	5 (0)	40 (0)
sui	167 (3)	0 (0)	85 (0)	29 (0)	1 (0)	119 (6)	34 (0)	435 (9)
other	11 (0)	0 (0)	21 (0)	33 (0)	0 (0)	3 (0)	1 (0)	69 (0)
Total	377 (3)	0 (0)	263 (0)	125 (0)	16 (0)	278 (6)	76 (0)	1135 (9)
Anthelmithics								
bov	89 (0)	0 (0)	99 (0)	13 (0)	4 (0)	73 (0)	24 (1)	302 (1)
ovi	138 (0)	0 (0)	11 (0)	69 (0)	6 (0)	121 (0)	47 (0)	392 (0)
sui	27 (0)	0 (0)	12 (0)	9 (0)	0 (0)	33 (0)	6 (0)	87 (0)
Total	254 (0)	0 (0)	122 (0)	91 (0)	10 (0)	227 (0)	77 (1)	781 (1)
Growth Promotants								
bov	166 (0)	0 (0)	148 (0)	30 (0)	9 (0)	111 (0)	17 (0)	481 (0)
ovi	155 (0)	0 (0)	11 (0)	80 (0)	7 (0)	88 (0)	48 (0)	389 (0)
pou	1 (0)	0 (0)	0 (0)	1 (0)	0 (0)	2 (0)	0 (0)	4 (0)
sui	12 (0)	0 (0)	4 (0)	3 (0)	0 (0)	7 (0)	2 (0)	28 (0)
other	9 (0)	0 (0)	19 (0)	17 (0)	0 (0)	4 (0)	0 (0)	49 (0)
Total	343 (0)	0 (0)	182 (0)	131 (0)	16 (0)	212 (0)	67 (0)	951 (0)
Insecticides								
bov	291 (0)	1 (0)	242 (0)	84 (0)	23 (0)	175 (0)	64 (0)	880 (0)
ovi	319 (0)	1 (0)	32 (0)	159 (0)	25 (0)	256 (0)	112 (0)	904 (0)
pou	0 (0)	0 (0)	5 (0)	2 (0)	0 (0)	4 (0)	0 (0)	11 (0)
sui	78 (0)	0 (0)	43 (0)	28 (0)	0 (0)	55 (0)	17 (0)	221 (0)
feral pig	1 (0)	0 (0)	22 (0)	0 (0)	0 (0)	0 (0)	0 (0)	23 (0)
other	30 (0)	0 (0)	62 (0)	19 (0)	0 (0)	2 (0)	3 (0)	116 (0)
Total	719 (0)	2 (0)	406 (0)	292 (0)	48 (0)	492 (0)	196 (0)	2155 (0)
Metals								
bov	29 (2)	0 (0)	14 (2)	8 (0)	1(0)	15(1)	6(0)	73 (5)
ovi	39 (1)	0 (0)	1 (0)	12 (2)	2 (0)	28 (1)	9 (2)	91 (6)
pou	0 (0)	0 (0)	1 (0)	1 (0)	0 (0)	4 (0)	1 (0)	7 (0)
sui	19 (0)	0 (0)	10 (0)	1 (0)	0 (0)	9 (0)	5 (1)	44 (1)
other	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (2)	3 (2)
Total	87 (3)	0 (0)	26 (2)	22 (2)	3 (0)	56 (2)	24 (5)	218 (14)

Zoonoses

Q fever continues to be the most commonly notified zoonosis, followed by leptospirosis and ornithosis.

Table 8: Notifications of zoonotic disease, 1 April to 30 June1996.

Disease	ACT	NSW	NT	Qld	SA	Tas.	Vic.	WA	Total	This quarter 1995	Year to date
Brucellosis	0	1	0	8	0	0	1	0	10	9	18
Hydatidosis	1	5	0	3	0	0	2	1	12	9	20
Leptospirosis	0	10	0	44	1	0	10	0	65	24	88
Listeriosis	2	3	0	2	5	0	3	0	15	11	27
Ornithosis	0	0	0	6	0	0	16	2	24	26	53
Q fever	0	73	0	34	1	0	24	3	135	101	223

Source: Communicable Diseases Network Australia and New Zealand - National Notifiable Diseases Surveillance System (personal communication).

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

Salmonella surveillance

The National Salmonella Surveillance Scheme (NSSS) started as a pilot program in 1979, and was formally launched in 1980. Initially, only data on *Salmonella* isolates from humans was recorded, but in 1983, the Scheme was expanded to include many enteric pathogens from animals, food, water and environmental samples. Data on isolates of salmonellae and other pathogens are submitted to the NSSS from participating laboratories around Australia.

The data is maintained in a networked microcomputer database, allowing easy access for analysis and reporting. There are currently more than 100 000 entries in the database.

Quarterly newsletters and annual reports of both human and non-human isolates are published, and detailed data searches are provided on request. The NSSS is operated and maintained on behalf of the Commonwealth and States/Territories by the Microbiological Diagnostic Unit at the University of Melbourne.

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

Table 9: *Salmonella* notifications for the period from 1 April to 30 June 1996

	S. typhimurium	*S. dublin*	*S. bovismorbificans*	*S. infantis*	others	Total
cattle	45	25	6	4	8	88
sheep/goats	6	0	1	1	1	9
pig	0	0	1	0	1	2
poultry/avian	10	0	0	0	6	16
horse	1	0	1	0	0	2
dogs/cats	0	0	0	0	2	2
others*	7	0	0	1	9	17
Total	69	25	9	6	27	136

* “others” includes samples from native mammals, emus, rabbits, crocodiles, turtles, snakes and other reptiles

Contributed by: Diane Lightfoot, National Salmonella Surveillance Scheme, Microbiological Di-

Suspect Exotic Disease Investigations

There were 21 exotic disease investigations reported during the quarter as shown in Table 10.

Table 10: Exotic disease investigations reported 1 April to 30 June 1996

Disease	Species	Date	State	Response	Finding
Newcastle disease	avi	4/04/96	WA	2	Infectious bronchitis
Avian influenza	avi	5/04/96	Vic.	2	Infectious laryngotracheitis
Newcastle disease	avi	12/04/96	WA	2	Infectious laryngotracheitis
Newcastle disease	avi	15/04/96	NSW	2	Pasteurellosis
Equine morbillivirus	equ	15/04/96	NSW	3	excluded
Equine morbillivirus	equ	15/04/96	NSW	3	Pneumonia
Screw worm fly	hum	16/04/96	WA	2	New World Bot Fly (*D. hominis)*
Foot and Mouth	bov	16/04/96	Vic	1	Photosensitisation
Newcastle disease	avi	14/05/96	WA	2	Negative
Bluetongue	ovi	15/05/96	NSW	3	Panicum poisoning
Equine morbillivirus	equ	15/05/96	NSW	3	Excluded
Avian influenza	avi	16/05/96	Vic.	2	Infectious laryngotracheitis
Duck viral enteritis	avi	19/05/96	WA	3	Still in progress
BSE	bov	23/05/96	Vic.	3	Hepatitis and pulmonary congestion
Scrapie	cer	24/05/96	WA	2	Negative
BSE	bov	5/06/96	Vic.	2	Negative
Newcatsle disease	avi	6/06/96	WA	2	Negative
Equine morbillivirus	equ	11/06/96	Vic	2	Chronic liver failure due to plant poisoning
Rabies	fau	15/06/96	NSW	5	Lyssavirus
EVA	equ	16/06/96	WA	2	Negative
Lumpy skin disease	bov	18/06/96	Tas.	3	Negative

KEY**:**
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

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 (formerly the Foreign Diseases Unit), DPIE.

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