ANIMAL HEALTH SURVEILLANCE QUARTERLY

*Newsletter of Australia's National Animal Health Information System*

**Volume 4** **Issue 1**

**Quarterly Report for 1 January to 31 March 1999**

# Preface

This issue describes some of the arrangements for the equestrian events in the Sydney 2000 Olympic Games. The eradication of black-striped mussels after they were discovered in Darwin appears to be complete. Decontamination after a large outbreak of virulent Newcastle disease is proceeding. There are also details of an Australian aid project dealing with foot-and-mouth disease in the Philippines. Highlights of disease surveillance activities and items of interest from States and Territories are also included.

The issue has summaries of disease surveillance and monitoring programs reported to the National Animal Health Information System (NAHIS) for the period from 1 January to 31 March 1999. Only summary information is recorded in NAHIS, with detailed data being maintained by the source organisation. The information included in this report is accurate at the time of publication but, because of the short reporting and production time, minor discrepancies may occur.

*GARDNER MURRAY*
*Australian Chief Veterinary Officer*

# Sydney 2000 Olympic Games — equestrian events

Considerable progress has been made at the Sydney International Equestrian Centre (SIEC), the site of the equestrian competition for the Sydney 2000 Olympics. The SIEC at Horsley Park within the Western Sydney Regional Park will provide all the facilities required for the Olympic equestrian competitions in jumping, dressage and three-day events. SIEC will also be a quarantine station for imported Olympic horses. The permanent facilities at SIEC are close to completion. The roof is on the permanent stables, the bases are down for all arenas, the main arena surrounds are taking shape and the indoor arena is partly completed. Over 35 000 native trees have been planted at the site. The SIEC will be completed in mid 1999 in time for a test event in September 1999.

There will be stabling on site for 270 horses with a maximum of 225 'competition horses' and the remainder made up of 'reserve horses'. The Sydney Organising Committee for the Olympic Games (SOCOG) will pay for the freight of horses to Australia from nominated hubs in Europe and North America during a specified period prior to the Olympics. Horses will be imported under current quarantine requirements for the temporary importation of horses, undergoing 14 days quarantine prior to export and a further 14 days quarantine on arrival in Australia. Imported horses will need to be at SIEC at least two weeks prior to the commencement of the Olympic Games, on 15 September 2000, to complete post arrival quarantine. SIEC has full training facilities so that the horses will be able to continue to train whilst in quarantine. During and after the Olympic competition the horses will be under quarantine surveillance until exported. 'Australian' horses or those that have been imported earlier into Australia

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to acclimatise will join the other Olympic competition horses at SIEC following the completion of the post arrival quarantine period, just before the commencement of the Games.

Equine piroplasmosis is a tick-borne protozoal disease of equids caused by the organisms (piroplasms) *Babesia equi* and *Babesia caballi*. The disease can be acute, sub-acute or chronic and is characterised by fever, sometimes intermittent in nature, anaemia and jaundice. Chronic cases usually present with a history of non-specific clinical signs including mild inappetence, weight loss and poor performance. Infected animals may remain carriers of piroplasms for long periods and act as a source of infection to vector ticks.

Australia's current quarantine requirements for the temporary importation of horses prohibit the importation of horses that test positive for antibodies to the disease equine piroplasmosis (ie are positive to serological tests). This has particular relevance for the Sydney Olympics as several elite competition horses are positive for the disease. The Australian Quarantine and Inspection Service (AQIS) has recently circulated to stakeholders a draft import risk analysis report for the temporary importation of horses that are test-positive for antibodies to equine piroplasmosis.

For equine piroplasmosis to become established in Australia through the importation of horses, an infected horse or an infected tick must be imported. If an infected horse was imported an Australian tick capable of transmitting the disease must feed on this horse and then find other susceptible hosts. If an infected tick was introduced into Australia it must transmit the infection to susceptible animals for the disease to establish in Australia. No Australian tick species have been confirmed as natural vectors of equine piroplasmosis.

AQIS is proposing that competition horses that test positive for antibodies to equine piroplasmosis be permitted to compete at the Sydney 2000 Olympics subject to certain risk management measures. These measures are designed to prevent the establishment and spread of equine piroplasmosis and include:

- accurately determining the piroplasmosis status of the horse to be imported;
- preventing the introduction of exotic ticks;
- preventing ticks already present in Australia from attaching to horses that test positive for the disease; and
- preventing the accidental spread of the disease resulting from medical/veterinary intervention such as re-use of syringes and needles.

AQIS considers that the risk of establishment of equine piroplasmosis in Australia from the temporary importation of horses that are serologically positive for this disease for competition and racing purposes is negligible, based on the available evidence and the proposed risk reduction measures. The measures proposed are considered appropriate to protect the Australian domestic horse population by preventing the introduction of exotic ticks and the attachment of domestic ticks to imported horses that test positive to equine piroplasmosis.

Copies of the draft import risk analysis report can be obtained from Robyn Martin, AQPB, AQIS. Further details can be found at www.aqis.gov.au on the internet.

# Mussel infestation

The black-striped mussel (*Congeria* spp) is a marine pest which does not occur in Australian waters. On 27 March 1999 a heavy infestation was found in Cullen Bay marina in Darwin. The finding was made during routine monitoring by a team of divers from the Centre for Research on Introduced Marine Pests (CRIMP). This mussel is a marine pest elsewhere in the Asia–Pacific area, and has the potential to devastate the pearling, prawn, tourism and fishing industries in Australia if not contained. The mussel originated in the West Atlantic tropical waters in Central America, and has since been found as far afield as India, Singapore, Japan and Korea. It can attach to almost any surface, and invades pipes and internal parts of vessels, as well as displacing native species. The mussel was believed to have entered Australia on a visiting overseas yacht.

The Northern Territory was responsible for the eradication program. It established a task force to coordinate the response, which involved collaboration between fisheries and quarantine staff of DPIF, NT Police, NT Museum, NT Emergency Services, and many others. A national liaison group

was also established through AFFA in Canberra. This involved fisheries and/or environment authorities in all States, and Commonwealth authorities such as AQIS, Customs, Environment Australia and Defence.

Dive teams checked high risk sites all around the Darwin. There were six findings of the mussel in Darwin. Treatment centred on three enclosed marinas, which were declared quarantine areas. Two types of external treatment were used in the efforts to kill the mussel — chlorine and/or copper sulphate. Internal treatments included copper sulphate, detergent or boiling water. Boats at the other three locations were taken out of the water for treatment; all had previously been in Cullen Bay Marina.

In addition, boats that had left the three marinas during the period of infestation were tracked and both the boats and their anchorages checked. This included prawn fishery and pearling vessels that operate from the Gulf of Carpentaria to the Kimberleys and northern WA respectively. No black-striped mussels were found outside Darwin.

On 23 April 1999 the treatments to kill all black-striped mussels were assessed as successful, and the marinas were opened with full access for all boats. A monitoring program has been established to:

- monitor the recovery of the marine environments;
- monitor the copper residuals in the water and sediment, both in and immediately outside the marinas; and
- monitor for the recurrence of *Congeria* sp.

On 30 April the Ministerial Council on Fisheries and Aquaculture endorsed the development of a risk-based assessment strategy for marine pests that may enter Australia, to minimise the risk of introducing marine pests, and to prevent their spread once in Australia. The group charged with preparing the strategy includes Standing Committee on Fisheries and Aquaculture (SCFA), Standing Committee on Conservation (SCC), Environment Australia, AFFA, CSIRO and AQIS, and will work closely with the Australian Ballast Water Management Advisory Council.

*Contributed by: Nick Rayns,*
*Director, Fisheries, NT DPIF*

# Foot-and-mouth disease in the Philippines

Foot and mouth disease (FMD) was first diagnosed in the Philippines in a shipment of meat animals imported into Manila from Hong Kong in 1902. The first recorded epidemic, in 1908, started in animals imported from Hong Kong and spread rapidly to 25 Provinces. Over the next 90 years, there were a number of outbreaks, with a cyclical occurrence of epidemics every 8–10 years but with intervening periods of sporadic occurrence or apparent disease freedom. The major serotypes have been O, A and C, with no occurrence of Asia 1, nor the three South African Serotypes. Types A and C have not been seen for some years.

The current outbreak commenced in September 1994 in a back-yard piggery in Antipolo, Rizal Province, just to the east of Metro Manila. During the next six months, the disease spread rapidly throughout 22 of the 29 provinces on the main island of Luzon. Some 100 000 clinical cases in pigs were reported for the year 1995, which in retrospect was probably a conservative estimate of the actual numbers affected. The President declared a State of Calamity and committed funds for the purchase of vaccine and deputed staff into a National Task Force. FAO responded to a request for short-term technical and material assistance. A detailed National Plan for the Control and Eradication of FMD was developed and approved in September 1996. An AusAID-funded and FAO-managed project started in December that year to assist with the implementation of specific aspects of this plan.

Epidemiologically, the current outbreak has many unique features. The causative Type O virus almost certainly originated from Northern Asia and entered the country through Hong Kong. It is particularly porcinophilic, with an almost 100% predilection for that species. It has a very short incubation period in pigs with fever and vesicle development within 24–36 hours of initial exposure in some instances. It causes severe clinical disease in affected animals, abortion in pregnant sows and a high mortality in piglets. Vesicular development is particularly severe

on the dorsal surface of the snout immediately behind the nares where lesions are either singular, multiple, extremely large and turgid. Piglets often die from myocarditis before vesicles develop. The strain was shown to be significantly different to O isolates from previous outbreaks in the Philippines and is closely related to the strain recently detected in Taiwan.

Spread of disease within the country mainly occurs from the movement of live affected animals and animal product and the feeding of swill. It is estimated that some 70% of the national pig population of 10 million is owned by back-yard farmers; in many parts of the country it is widely accepted that a 'house is not a home without a pig'. The marketing system is quite complex, often involving itinerant traders driving from village to village buying and selling individual or small numbers of pigs. In addition, the economic situation of most owners does not allow the purchase of commercial feeds and there is a heavy reliance of using scraps, waste and spoiled meat in swill feeding.

This AusAID/FAO project works in close collaboration with the national program. One Australian veterinarian is based with the National FMD Task Force at the Bureau of Animal Industry in Manila while a second is located at the headquarters of the Bicol region in Southern Luzon. Workable solutions to unique problems are developed and tested in Bicol and then adapted to the other regions. Specific inputs have been in the areas of training front-line field personnel in the recognition, containment, control and eradication of disease. This training is complemented by the provision of essential field equipment and requirements for mobility (locally manufactured 'jeeps') and communication (mobile phones). In-depth training has been provided to senior field veterinarians in the practical application of epidemiological principles and a computerised Information Management System has been developed, implemented and is in constant use. The project employs a number of casual staff to implement strategic vaccination programs and selected movement checkpoints. It also sponsors a major public-awareness program aimed at al levels of the community; specific components are designed for backyard farmers, commercial producers, traders, travelling public, consumers and the decision makers in administrative and political positions. It has recently initiated the development of an inaugural Animal Health Act to provide legal support to disease control activities.

There is no FMD in the southern islands of the Visayas and Mindanao, and none in those islands immediately adjacent to Luzon. Within Luzon, the Bicol peninsula and the northern regions of Ilocos, the Cagayan Valley and the Cordillera Mountains are now believed to be free. Current inputs are to substantiate disease-freedom in these areas. FMD is now confined to central Luzon in an area within 150 km of Manila. Stricter movement control is in place together with concentrated strategic vaccination in key areas. It is confidently anticipated that the Philippines will reach the final goal of its National Program 'to officially declare and maintain the whole country as FMD-free by the year 2003'.

*Contributed by: Ray Webb,*
*Chief Technical Adviser,*
*AusAID/FAO FMD Project*

**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 Health Science and Emergency Management Branch, National Offices of Animal and Plant Health and Food Safety, AFFA.*

# Newcastle Disease

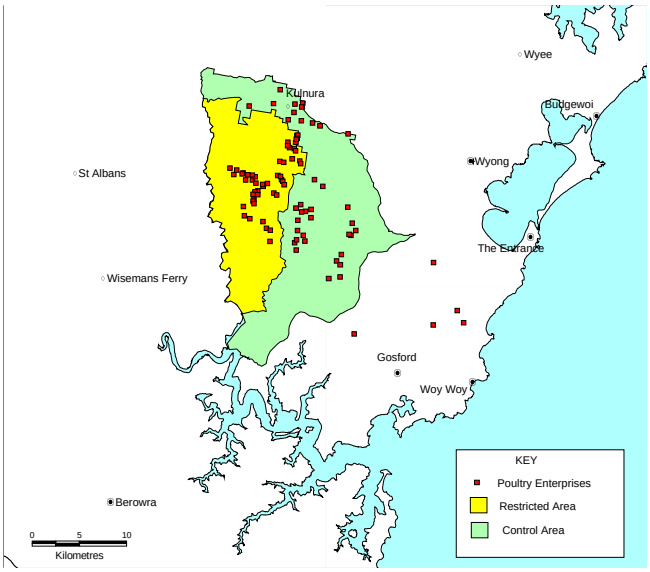
Newcastle disease was suspected in chickens on a poultry farm at Mangrove Mountain, near Sydney, in New South Wales on 27 March 1999 and confirmed by testing at the Australian Animal Health Laboratory at Geelong on 1 April 1999. The affected property was placed in quarantine and eradication measures implemented, with all birds on the property destroyed and burned. Restricted and Control areas were established and a surveillance program implemented. Depopulation of this property was completed on 4 April and clean up and disposal of litter was completed by 14 April.

Surveillance activities revealed a further eight suspect properties during the period 14–21 April, with virulent ND subsequently confirmed on six of these. A further five properties were identified as suspect. The Restricted Area was expanded to include the entire Mangrove Mountain ridge, and the Control Area was expanded to include all poultry flocks in the Peats Ridge and Somersby areas. Depopulation of the infected and suspect properties commenced on 17 April with disposal initially by burning but subsequently burial in a disused quarry. The initial decision to depopulate the infected and suspect properties was extended on 22 April to include all properties in the Restricted area.

By the end of April, there were 990 people working in the Local Disease Control Centre at Kariong, or in the Restricted and Control Areas. A further 13 people were involved in the State Disease Control Headquarters. Organisations involved in the response include NSW Agriculture, Emergency services organisations, Navy, interstate agencies and volunteers, and many other groups.

About 1 142 000 birds had been destroyed on 14 farms by 1 May. A further 13 farms were still awaiting depopulation.

**Location of Newcastle disease outbreak**




# Tropical canine pancytopaenia

The details mentioned in the last issue of *Animal Health Surveillance Quarterly* about the investigation into possible tropical canine pancytopaenia (TCP) in three dogs require some clarification.

The first case concerned a dog that was imported from Spain. After the required period in quarantine at Eastern Creek Quarantine Station it was released to the owner in September 1998. A few days later the owner took the dog to her local veterinarian, at which time a blood sample was taken for a complete blood count. This identified that the dog was thrombocytopaenic, and suggested that TCP should be considered in the differential diagnosis. The veterinarian contacted AQIS, at which time a blood sample was requested for submission to AAHL to check for antibodies to *Ehrlichia canis*. Doxycycline treatment and application of an external parasiticide were also recommended.

Because serology showed that the dog had a low positive titre to *E. canis*, the dog was ordered into quarantine at Eastern Creek Quarantine Station and retested. This retest showed a negative result and the dog was then released under quarantine surveillance, although treatment continued. The dog was released from quarantine control after another antibody test was also negative. Further discussion with the owner found that a tick had been removed not 8 weeks before the dog's export as thought but rather when the dog was 8–12 weeks of age, some 9 months before export.

For the record, it is also worth noting that there is no program of routine testing of companion animals in quarantine in Australia. A series of tests (including one for *E. canis*) and treatments are required to import dogs into Australia. If any of these tests or treatments are not performed or do not comply with Australia's import conditions, or if there are concerns regarding the dog's health status while in quarantine, testing is repeated and the animal remains in quarantine.

The second case mentioned in the article concerned a dog imported from Germany. An exotic tick was identified on this dog during an inspection at Eastern Creek Quarantine Station. On this basis, a blood sample was collected and submitted to AAHL for testing for antibody to *E. canis*. The first test returned an equivocal result, and so a second sample was submitted. This sample returned a negative result, and the dog was duly released from quarantine.

The third case, as reported in the article, was confirmed negative for *E. canis* by serological testing.

*Phil Widders, Chief Quarantine Officer (Animals), AQIS NSW, ph (61 2) 9364 7393*

## The NSW *Salmonella enteritidis* surveillance program

The human health impact of *Salmonella enteriditis* (SE) in other countries is significant. In the United States of America there are an estimated 637 000 cases of human illness per year related to SE-positive eggs.

In Australia there have been no reported human cases of SE due to consumption of eggs, and SE has never been detected in commercial table eggs in Australia. Because SE in layers can be present in a flock without any obvious clinical signs, an active monitoring program is essential.

In other countries in the world, SE accreditation and control schemes are introduced as a result of outbreaks of SE among consumers. These schemes at the commercial layer farm level employ a variety of methods that usually are introduced once a human case is detected.

In NSW, a surveillance program was introduced to detect SE in commercial flocks at an early stage, before the problem becomes widespread and impacts on the public as well as industry. The scheme has been operational in NSW for 18 months and covers 56% of commercial layer farms and 100% of elite breeding flocks.

Monthly environmental sampling of every shed on participating farms and basic biosecurity and egg storage standards must be met in order to gain accreditation. Sampling includes dragging swabs along the entire length of each row in the shed and culturing these swabs for Salmonella.

Since the inception of the scheme SE has never been detected in participating flocks. A senior veterinary officer of NSW Agriculture acts as the Registrar for the scheme.

*For further information, contact:*
*George Arzey, NSW Agriculture,*
*Elizabeth Macarthur Agricultural Institute,*
*PMB 8 Camden NSW 2571*

## Personnel changes at AAHC

Australian Animal Health Council Limited (AAHC) has announced the appointment of Dr Geoff Neumann as the new Chief Executive Officer, replacing Mr Paul Crew who retired on 7 May.

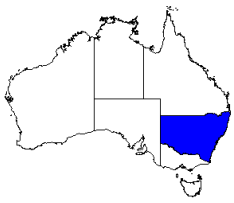
Before his appointment, Dr Neumann was Chief Veterinary Officer in South Australia for three years and most recently managed his own business, providing consultant animal health services to government and the livestock industries.

Mr Stephen Penhall, AAHC Business Manager, leaves the company on 28 May to pursue his own business interests. AAHC is currently recruiting a Programs Business Manager and a Finance and Administration Manager.

# State and Territory Reports

## New South Wales

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



### TB or not TB — cattle in northern NSW

A steer slaughtered at a Queensland abattoir in December 1998 showed lesions suggestive of bovine tuberculosis (TB). Samples taken also showed histopathological changes typical of tuberculosis. Sections were referred to the regional veterinary laboratory at Menangle for a second opinion, and in January typical histopathology and a small number of acid fast staining bacteria typical of tuberculosis supported the diagnosis. Samples were sent to the TB reference laboratory in Perth for confirmation of the strain by culture.

The steer was traced via tail tags and brands to two properties in Narrabri Rural Lands protection Board that had purchased a mob of steers as stores from Boggabilla saleyards. These cattle originated from a Queensland property, which had been sold with the stock dispersed, though the owner still retained some of the cattle, which have been agisted.

The remaining steers and all in contact cattle on the two properties, except unweaned calves were tested by intradermal injection of tuberculin. One of the steers, with an identical brand to the initial reactor, gave a positive reading, with all other cattle on both properties giving a negative result. At postmortem examination of the reactor on the property, there were no visible lesions suggestive of TB. Uncut lymph nodes were collected for laboratory culture in Perth.

Culture results from the initial steer have since shown the cause not to be *M. bovis*. Culture is continuing to identify the organism, although it does not appear to be any of the commonly found TB species (bovine, human or avian).

### Menangle Virus Eradicated

In 1997 a new virus (Menangle virus) was isolated from a piggery at Menangle in NSW (*AHSQ* Vol.2 Issue 3). This virus was thought to have originated from fruit bats, and was responsible for a substantial reduction in the live birth rate for infected sows.

During 1998 an attempt was made to eradicate the virus from the piggery and the program was completed late in that year. Subsequent testing has now confirmed that the virus has been eradicated. Additional precautions have also been taken to prevent the re-introduction of this virus into the piggery.

### National Transmissible Spongiform Encephalopathy Surveillance Program

During the quarter there have been 23 bovine, 51 ovine, and 1 caprine brain submissions for the purpose of TSE exclusion. These were all histologically negative for TSE. Diagnoses in cattle included transit tetany, leptomeningitis, chronic Xanthorrhoea and focal spongiosis. Focal spongiosis of the fore- and mid-brain accounts for 18–29% of non-BSE cases in the United Kingdom, but its cause is unclear. In sheep, the majority of cases were due to polioencephalomalacia, fasciolosis or listeriosis.

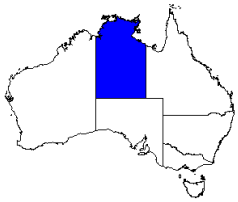
### Bee diseases

During the quarter 240 tests were done for American Foul Brood (AFB) with 87 positive, making a total of 570 tests this financial year, with 229 positive. Of these positive results, 118 have been individual notifications by beekeepers, and 111 have been monitoring reports. Monitoring reports consist of either slides taken by regulatory inspectors, or from routine honey sampling. Of the 118 individual notifications, 83 had previous positive reports during the last financial year.

### Ovine Johne's Disease surveillance

At 31 March 1999, there were 426 infected, 515 suspect and 1178 under-surveillance properties for OJD, an increase of 28, 86 and 126 respectively over the period. Three more properties were placed in public quarantine for OJD, bringing the total to 33. The owners of 95 suspect and 241 infected properties have signed the required undertaking instead of quarantine.

# Northern Territory



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

## Disease investigations

In early March the sudden deaths of two racehorses were reported to a local veterinarian in Alice Springs. After notifying the DPIF, post mortems were carried out, with advice from the Australian Jockey Club (AJC) equine specialist regarding suitable samples for toxicology. The post mortem examinations were unremarkable, except that the spleen of one horse was 2–3 times the normal size. On advice from the AJC, the Alice Springs Turf Club placed the horses kept in the same stables as the dead ones under quarantine. DPIF provided support via visual examination of quarantined horses, and through advice and negotiations with the Australian Animal Health Laboratory and the Elizabeth MacArthur Institute laboratories. Initial results ruled out anthrax, salmonella and Hendra virus, and histopathology indicated that the horses died due to a severe, acute allergic reaction of undetermined cause. Investigations continued via interviews of relevant parties, and swabbing of the horses that had been placed in quarantine. No definitive diagnosis has been made.

## Surveillance

A cross-sectional survey for bluetongue virus antibodies in adult, station-bred cattle was carried out last year. An important aim of the survey was to clarify the area where cattle do not have antibodies to bluetongue virus. The survey confirmed this area as the Alice Springs and southern Tennant Creek regions. Antibodies to bluetongue virus were found across the northern Barkly Tablelands which was further south than first expected. The percent of cattle with antibodies to the bluetongue virus tends to increase the further north the cattle are, with 75–90% of cattle on some properties in the Darwin, Katherine and gulf regions being antibody positive.

A workshop on the National Transmissible Spongiform Encephalopathy Surveillance Program (NTSESP) was held at Berrimah Farm for stock inspectors and veterinarians. After some background information on the scheme was given, the veterinary pathologists led sessions on an efficient brain removal technique, which everyone tried, and post-mortem technique.

## Bacteria

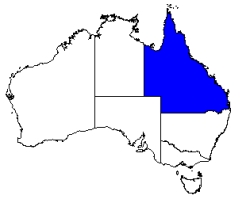
Diagnoses of melioidosis (*Burkholderia pseudomallei* infection) were made, which is not unusual during the wet season. Species affected included dogs (isolated from the placenta of a bitch that had aborted, from a skin wound, and from an abscess) and a spider monkey (isolated from liver abscesses).

## Viruses

Numerous viruses have been isolated from the sentinel cattle at Beatrice Hill Farm, near Darwin. Most of these are bluetongue viruses and serology suggests that the isolates are serotype 1.

Seroconversion to Murray Valley encephalitis (MVE) virus, or MVE and Kunjin virus, occurred in sentinel chickens at Tennant Creek and Katherine. Seroconversions to these viruses only occur as far south as Tennant Creek every 3–4 years.

# Queensland



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

## Tick fever

Good seasonal conditions and high rainfall have resulted in many reports of tick fever in cattle. In the central part of the State there were ten outbreaks involving *Babesia bovis*, two involving *Babesia bigemina* and one involving *Anaplasma marginale*. In the north, three 20-month-old desexed males from a mob of 50 died at an abattoir from *Babesia bovis*. In the south 48 *Babesia bovis*, 3 *Babesia bigemina* and 8 anaplasmosis cases were diagnosed.

## Bovine ephemeral fever

Cattle showing symptoms of depression, lameness and recumbency indicative of ephemeral fever have been reported from central, south, south-east and west regions of the State. Some cases have been confirmed by demonstrating the presence of virus.

## Internal parasites

With the continuing high rainfall, morbidities and mortalities from internal parasites have been recorded from all regions apart from the south. Cattle in the north of the State had levels up to 9300 eggs per gram of faeces and cattle deaths from helminth infestation were recorded in the same part of the country. *Cooperia* spp. were found to be responsible for the deaths of five weaner steers near Gympie. Sheep of various classes, including rams, showing ill-thrift, depression and sudden death were sampled around Blackall and found to have helminth infestation with very high faecal egg counts recorded in some samples.

## Campylobacteriosis

Bovine genital campylobacteriosis has been diagnosed in herds from the north, central and west regions of the State all showing poor fertility and abortions. In central region, a total of 22 of 30 cows had very high antibody titres to *Campylobacter foetus var venerealis* in vaginal mucous collected at slaughter. *Trichomonas* was not isolated. In west region not only were 5 of 12 cows serologically positive to *Campylobacter* but also 12 of 12 were positive to mucosal disease virus and 9 of 12 to infectious bovine rhinotracheitis.

## Aspergillosis in chickens

About 1100 deaths occurred in a flock of 20 000 young broiler chickens in south-east Queensland. Deaths began at the age of 14 days with clinical signs of gasping and recumbency. *Aspergillus fumigatus* was isolated from extensive granulomas in the lungs and airsacs and *Escherichia coli* from purulent abdominal cellulitis.

## Feedlot diseases

Heat stroke was responsible for 137 deaths and approximately 150 other clinically affected animals at a 2000 head southern feedlot in early March. These were three-year-old Angus steers, which had been introduced 150 days previously. Animals showed elevated serum muscle enzymes, renal insufficiency and a relative polycythaemia due to dehydration. Infectious bovine rhinotracheitis was diagnosed as the cause of respiratory disease on two large southern feedlots. Animals affected were in the first 1–2 months of feeding and 12% of one lot showed clinical disease. Diffuse diphtheritic tracheitis and suppurative bronchopneumonia were found at autopsy.

## Salmonellosis

Hand-fed calves introduced to a Darling Downs property have been dying with marked jaundice and fever. An autopsy showed marked jaundice, a diffuse brownish discolouration of the lungs (which remained inflated and were of a rubbery consistency), hepatomegaly and splenomegaly. Histologically, there was diffuse interstitial pneumonia with areas of suppurative bronchopneumonia, necrotising splenitis and severe necrotising hepatitis with thrombosis of central veins. *Salmonella* spp. were isolated from most organs and septicaemic salmonellosis was diagnosed.

## 'Humpy back' in sheep

'Humpy back'has been widespread throughout the western region of the State. It occurs at mustering, almost always affecting wethers or rams. Affected animals walk with their backs humped up, have peculiar gaits and eventually become recumbent. There are no gross changes at autopsy and the only consistent finding has been wallerian degeneration of the nerves of the spinal cord. Thorough investigation, including scrapie exclusion, has failed to confirm the cause although it is suggested that poisoning from *Malvastrom* sp. or *Solanum esuriale* ('potato bush') may be responsible. Most affected properties experience some deaths but the main economic effect is the serious disruption to mustering and management.

## Myopathy in lambs

A substantial number of lambs have been recorded on two properties near Longreach with an inability to lift their heads above shoulder level. The condition was present at birth. The lambs were small but appeared normal in all other respects. Their ability to suck was obviously impeded and all those affected were dying. A skeletal muscle myopathy was diagnosed with the changes most severe in the deep cervical musculature.

## Goats

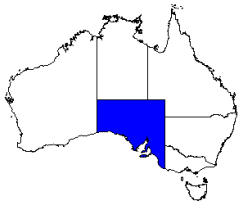
Dermatophilosis was responsible for the deaths of three 6-month-old Anglo-Nubian male goats, which had recently joined a flock in the western region.

They developed an acute generalised skin condition, submandibular oedema and significant anaemia. Polioencephalomalacia was diagnosed histologically in female goats from two herds in southeast and central region. Neurological signs seen were staggering, convulsions and recumbency. No specific cause of the polioencephalomalacia was determined.

### Kangaroos

Large numbers of kangaroo deaths were reported in the southwest of the State. Two autopsies performed showed that one had meningitis and the other meningoencephalitis. The cause was not determined. In addition one of them had sores on the paws and forearms from which orthopox virus was isolated. The second animal had a severe chronic interstitial pneumonia. Both animals were supporting many and various internal parasites. Both were negative for Hendra virus.

## South Australia



*Contributed by:*
*Kim Critchley*
*Primary Industries SA*

### Annual rye grass toxicity

The area within the State in which this disease occurs is enlarging. An outbreak occurred in sheep on the northern Eyre Peninsula. There is interest in the trials of a biological control using a fungus are being undertaken in WA.

### Avian encephalomyelitis

A flock of day old layer pullets suffered a mildly increased mortality from placement day. Birds showed mild to severe paresis with many exhibiting fine tremors. Avian encephalomyelitis was confirmed histologically but the clinical syndrome was unusual because of the low number of birds affected (less than 3%) and because new cases were still being seen up to 4–5 weeks of age.

### Ostrich fading syndrome

An ostrich farm carrying considerable bird numbers had severe mortality in chicks, losing many hundreds. Extensive investigation has not revealed any specific cause.

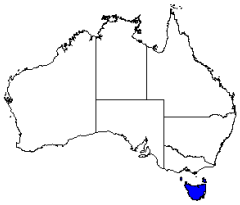
### Porcine parvovirus

There has been a dramatic increase in the number of cases of porcine parvovirus seen. This has thought to have arisen from a general industry relaxation in their vaccination protocols combined with vaccine availability problems.

### Caltrop poisoning

Poisoning in sheep from ingestion of caltrop (*Tribulus* spp.) occurs intermittently in SA. It is primarily a liver toxin and most Mallee farmers are aware of the syndrome in which one of the first signs seen are swollen, drooping ears. The past season has been dry, reducing feed availability but caltrop germinates and survives in harsher conditions than grasses and recent rains have supported its growth.

## Tasmania



*Contributed by:*
*Rod Andrewartha*
*DPIWE, Tasmania*

### Rabies exclusion

Brains for rabies exclusion were collected from the field from two dairy cattle in the far north west region. The cattle were from two separate properties and had similar presenting signs of a loss of condition over six to seven days, with an associated fall in milk production followed by the development of ataxia and an a apparent reluctance or inability to swallow. One animal went down in the stockyards. The other animal was prostrate in the paddock and was basically unresponsive to external stimuli other than in the genito-anal region. Longitudinally divided half brains were packed in the field and sent to AAHL that day. Results for rabies were negative, no lesions of a TSE were detected but both animals had severe lesions of encephalitic listeriosis.

### Ryegrass staggers

Ryegrass staggers has become an increasing problem in both sheep and cattle on Flinders Island over the last 10 years as the seasons seem to have become drier. Flinders Island has been in drought for a number of years but still gets intermittent light showers of rain during summer and autumn which result in short green pick. This seems to be ideal for

ryegrass staggers. Weaners are more severely affected than adults and are often left for weeks without being monitored as any disturbance causes large losses. Dehydration seems to be a factor contributing to deaths in adults as sheep that remain recumbent and can't drink when put in a hospital paddock, often recover if drenched with 1–2 litres of water. (Not all farmers agree to this.) Farms on the eastern side of the island are mainly affected as NZ ryegrass was sown down when the pastures were improved about 20 years ago. Losses occur on most farms in that area and it is not unusual for them to lose 200–300 sheep, although losses up to 500 and 600 have been reported this year.

### Poultry health

An increase in the number of lame birds associated with an increase in mortality (up to 6–7% per day) was seen over the summer 1998–99 in a well run operation in the north of the State. The problem was seen in a broiler operation, where the operator was hatching eggs and then rearing the birds to slaughter weight. He was also supplying day-old chicks to another broiler grower. Problems were only evident in birds in the broiler unit, which were hatched on site. The layers, which came onto the property as one-day-olds, did not suffer the same mortalities or leg problems.

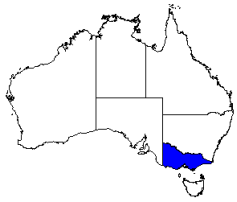
Post mortem examination of a number of birds revealed lesions in the tibiotarsal bones and the vertebral bones. The findings of necrosis, invasion of the bone marrow by inflammatory cells and myositis were consistent with a diagnosis of bacterial ostoemyelitis. As well gram-positive Staphylococci-like organisms were isolated from the lesions. Management of the hatchery was one area that concerned the owner. It is thought that the chicks might have been left on the shells for too long after hatching, and this could have been the source of entry of bacteria. A change in hatchery management seems to have solved the problem.

**NAHIS web site**

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

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

## Victoria



*Contributed by:*
*John Galvin*
*Agriculture Victoria*

### Anthrax prevention program

Anthrax control activities and active surveillance for the disease continue in the area of the 1997 outbreak. The preventive program involves annual vaccination of all cattle on properties where the disease occurred in 1997 and on adjoining properties, and active surveillance in which cattle presented to a local knackery and cattle that die of unexplained causes are tested for anthrax. Surveillance at the knackery this quarter involved testing over 400 cattle with no cases of anthrax detected. It is intended that compulsory vaccination of cattle on the farms adjoining farms where anthrax was detected in 1997 will cease in May 1999. Vaccination on farms where anthrax was detected in 1997 will continue to be compulsory until at least May 2000. There have been no cases of anthrax detected in the area since June 1998.

### National Livestock Identification System

The National Livestock Identification Scheme (NLIS) is an initiative of the national cattle industries, and State and Commonwealth governments. The scheme is intended to strengthen Australia's disease and chemical residue traceback systems, and also provides the opportunity to give carcass quality feedback to producers to facilitate genetic improvement in herds.

As part of the implementation of the NLIS in Victoria, one million free electronic ear tags are being issued to Victorian beef and dairy farmers. These tags are printed with a unique identification number and contain a transponder (microchip) that can be read electronically on-farm and in feedlots, saleyards and abattoirs. Two types of permanent tags are available. Breeder Tags are for cattle born on the owner's property and Post-Breeder Tags are for cattle not born on the owner's property. Cattle consigned to saleyards, abattoirs and knackeries will continue to be identified by a Transaction Tag (usually a tail tag). This will identify both the property on which the animal was born and the last property on which it was located. The receipt of orders for over 800 000 tags this quarter shows that the scheme is widely supported.

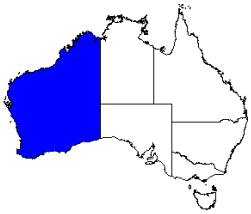
## Other reports

During the quarter, cattle diseases reported included four cattle deaths as a result of mycotoxicosis (anthrax was excluded as the cause of death), and photosensitisation associated with grazing brassica crops. Sheep mortalities were due to enterotoxaemia, haemonchosis caltrop (*Tribulus terrestris*) poisoning, and heliotrope poisoning. Four cases of infectious laryngotracheitis in birds were also investigated during the quarter.

Department veterinarians have been involved in a major project aimed at relocating 1000 koalas from an over-populated National Park to several other National Parks. The koalas are being sterilised by vasectomy or tubal ligation. It is expected that this will significantly reduce damage to trees caused by over-population and prevent future problems in the Parks to which the koalas are being relocated.

# Western Australia

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



## Exotic Disease Alerts.

An exotic disease alert in poultry, where avian influenza/Newcastle disease were suspected, tested negative. A microbat from Theda Station tested negative for Australian Bat Lyssavirus.

## Notifiable Diseases

Eleven notifiable diseases were recorded during the quarter, including mucosal disease and infectious bovine rhinotracheitis in cattle, malignant catarrhal fever in buffalo, infectious laryngotracheitis in poultry, salmonellosis in pigs, fowl cholera and liver fluke in horses. Although now removed from the notifiable diseases list (revised in March 1999), the diseases chalkbrood of bees, mycobacteriosis of dogs and cats, and cryptococcosis of cats were also recorded.

## Bat virus survey in WA

A survey of bats for lyssavirus and Hendra virus was conducted in the Kimberley and Pilbara over the summer by a team from the Queensland Department of Primary Industry. Results have been delayed because the principal investigator was required to join the international team in Malaysia investigating the virus outbreak. of Nipah virus.

## National TSE Surveillance Program

The annual targets are 24 cattle and 112 sheep. By 27 April the Animal Health Laboratory had tested two cattle and 10 sheep, excluding TSE from each.

## Laminitis/polyarthritis in feedlot cattle

This syndrome developed in feedlots at Margaret River, Narrogin and Mount Barker in October–November 1998. The surviving animals were purchased and placed on the Mount Barker Research Station, in contact with local station cattle, for continued study (part financed by the Cattle Industry Compensation Fund). Over several months, the study found that the syndrome is not highly transmissible, that affected cattle did have mildly compromised immune systems and that recovery is possible. The cause was not determined but probably involves dual viral infections together with stress. Further intensive experimentation would be required to resolve the issue if it recurs and becomes a significant industry concern.

## Ovine weaner ill-thrift syndrome

This syndrome involved lameness, ill-thrift and some deaths in weaner sheep introduced to standing mature oat crops in the Darkan area. The condition is under further study and involves local producers and agency veterinarians.

## Loosestrife toxicity

Deaths on several farms in the Tambellup-Kojonup area followed the introduction of sheep to canola stubbles. The paddocks were subsequently shown to have large areas of contamination with lesser loosestrife (*Lythrum hyssopifolia*), a summer weed not previously recognised as a cause of ill-health in WA. The distribution of the weed and its sudden emergence as a significant toxic plant are being further investigated.

## Leucoencephalopathy in calves

Further cases of ataxia in calves occurred in the Badgingarra area associated with pregnant cows grazing tagasaste. Cases were previously seen in October 1998. The pathological disease is being characterised in the first step towards understanding the mechanisms and possible cause.

# Quarterly Disease Statistics

## Control activities

### Tuberculosis

Australia was declared a Free Area for bovine tuberculosis (TB) on 31 December 1997. The National Granuloma Submission Program is the major surveillance tool for TB. Table 1 summarises results from the Program. No cases of TB were detected in the previous quarter in the 923 granulomas that were submitted.

**Table 1: Results of the National Granuloma Submission Program**

| | Granulomas submitted | TB +ve |
|---|---|---|
| **Oct – Dec 97** | 855 | 0 |
| **Jan – Mar 98** | 559 | 0 |
| **Apr – Jun 98** | 615 | 0 |
| **Jul – Sep 98** | 765 | 2 |
| **Oct – Dec 98** | 923 | 0 |
| **NSW** | 239 | 0 |
| **NT** | 10 | 0 |
| **QLD** | 340 | 0 |
| **SA** | 39 | 0 |
| **TAS** | 23 | 0 |
| **VIC** | 38 | 0 |
| **WA** | 234 | 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. A total of 120 abortion investigations were performed during the reporting period — all with negative results for bovine brucellosis. The results of recent brucellosis surveillance are shown in Table 2.

**Table 2: Surveillance for bovine brucellosis**

| | Abortion Investigations | | Test for other reasons | |
|---|---|---|---|---|
| | Tests | +ve | Tests | +ve |
| **Jan – Mar 98** | 169 | 0 | 1285 | 0 |
| **Apr – Jun 98** | 79 | 0 | 524 | 0 |
| **Jul – Sep 98** | 86 | 0 | 2459 | 0 |
| **Oct – Dec 98** | 218 | 0 | 3278 | 0 |
| **Jan – Mar 99** | 178 | 0 | 3582 | 0 |
| **NSW** | 24 | 0 | 174 | 0 |
| **NT** | 0 | 0 | 0 | 0 |
| **QLD** | 58 | 0 | 184 | 0 |
| **SA** | 4 | 0 | 3 | 0 |
| **TAS** | 5 | 0 | 30 | 0 |
| **VIC** | 0 | 0 | 84 | 0 |
| **WA** | 87 | 0 | 3107 | 0 |

### Enzootic bovine leucosis

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

**Table 3: Dairy herds tested free of EBL at 31 March 1999**

| | NSW | NT | QLD | SA | TAS | VIC | WA | AUS |
|---|---|---|---|---|---|---|---|---|
| **Free** | 1536 | 0 | 1735 | 729 | 679 | 6481 | 455 | 11 615 |
| **Herds** | 1749 | 0 | 2026 | 739 | 740 | 8453 | 455 | 14 162 |

### Ovine brucellosis

Accreditation programs for ovine brucellosis freedom are operating in most States. Table 4 shows the number of accredited flocks at the end of the quarter.

**Table 4: Ovine brucellosis accredited free flocks at 31 March 1999**

| NSW | NT | QLD | SA | TAS | VIC | WA | AUS |
|---|---|---|---|---|---|---|---|
| 1252 | 0 | 71 | 542 | 145 | 765 | 86 | 2861 |

## Johne's disease

Johne's disease (JD) occurs primarily in dairy cattle and sheep in Australia and to a lesser extent in beef cattle, goats and camelids. JD occurs in NSW, Victoria, Tasmania and South Australia. Surveillance programs have not identified endemic JD in Queensland, Western Australia and Northern Territory, and active measures are taken to stamp-out any incursions. Table 5 shows the number of herds and flocks known or suspected to be infected. A National Ovine Johne's Disease Control and Evaluation Program for the next six years has been endorsed. Market Assurance Programs (MAPs) are in operation for cattle, sheep, and alpaca.

**Table 5: Herds/flocks with JD at 31 March 1999**

| STATE | Cattle | Sheep | Goats | Alpacas | Total |
|---|---|---|---|---|---|
| NSW | 171 | 410 | 12 | 1 | 594 |
| NT | 0 | 0 | 0 | 0 | 0 |
| QLD | 0 | 0 | 0 | 0 | 0 |
| SA | 30 | 20 | 0 | 0 | 50 |
| TAS | 36 | 19 | 9 | 0 | 64 |
| VIC | 1774 | 17 | 8 | 11 | 1810 |
| WA | 0 | 0 | 0 | 0 | 0 |
| AUS | 2011 | 466 | 29 | 12 | 2518 |

### National JD programs

During the quarter progress was made in a number of matters. The Deed of Agreement for funding the $40 million National OJD Program was finalised and signed. Progress was made on moves by the States to harmonise zoning and movement requirements.

VetComm approved the Second Edition of the Standard Definitions and Rules for infection with cattle strains of *Mycobacterium paratuberculosis* and submitted it to SCARM for endorsement.

Specifications for both the National OJD Information System and for the Market Assurance Program Information System (MAPIS) are nearly finalised. Development of the latter will take into account the changes agreed for the CattleMAP and SheepMAP.

An external audit of 108 veterinarians and properties was completed for the CattleMAP and SheepMAP. No critical defects were identified and both MAPs were considered to be functioning in a satisfactory manner although often in the absence of adequate documentation.

The first Australian case of Johne's disease in a llama was confirmed in south-east Queensland in March. The 10 year old male llama had a history of ill-thrift over some months. Histology detected massive numbers of acid-fast organisms and cellular pathology was consistent with JD. It was positive on faecal culture. The llama had been introduced to Queensland from Victoria in 1996. It had originally been part of an assembly of alpaca and llama imported from Chile via New Zealand in 1990–91. This assembly was associated with the first cases of JD in alpaca in 1993.

### Market assurance programs (MAP)

The number of CattleMAP assessed herds increased from 564 at the end of December to 645 by March. Over the past three years about 60 assessed herd have withdrawn from the program. The main reasons have been the movement of the herd to land of lower status, dispersal of the herd, and introductions from herds of lower status, either as a small number of genetically valuable animals or large numbers for herd expansion. A workshop was held in March to review the CattleMAP and in particular to consider ways of making the program more practical for a broader range of cattle breeders. A report of the workshop has been circulated for comment.

The number of SheepMAP assessed flocks increased from 565 at the end of December to 576 by March. Uptake of the AlpacaMAP has been slow with only nine NSW herds and three SA herds having gained an assessed status by the end on March. The GoatMAP has been submitted for VetComm endorsement.

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

# Laboratory testing

The results of serological testing for a range of viral diseases from routine laboratory submissions for the quarter are shown in Table 6.

**Table 6: 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 |
| **Jan – Mar 98** | 1683 | 408 | 8005 | 224 | 2072 | 611 | 907 | 16 | 657 | 0 | 708 | 9 |
| **Apr – Jun 97** | 2951 | 568 | 9196 | 380 | 2692 | 316 | 1142 | 6 | 449 | 0 | 230 | 1 |
| **Jul – Sep 98** | 1988 | 572 | 11438 | 138 | 1622 | 261 | 525 | 4 | 594 | 0 | 576 | 4 |
| **Oct – Dec 98** | 1559 | 305 | 4976 | 397 | 957 | 163 | 3023 | 4 | 709 | 8 | 354 | 6 |
| **Jan – Mar 99** | 816 | 319 | 5061 | 250 | 1542 | 377 | 241 | 1 | 505 | 1 | 299 | 7 |
| **NSW** | 75 | 7 | 676 | 4 | 650 | 105 | 171 | 1 | 292 | 0 | 191 | 4 |
| **NT** | 355 | 181 | 344 | 67 | 456 | 152 | 0 | 0 | 0 | 0 | 0 | 0 |
| **QLD** | 268 | 123 | 3815 | 167 | 282 | 115 | 47 | 0 | 81 | 1 | 2 | 0 |
| **SA** | 2 | 0 | 45 | 0 | 2 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| **TAS** | 0 | 0 | 2 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 |
| **VIC** | 44 | 0 | 88 | 0 | 80 | 0 | 0 | 0 | 85 | 0 | 64 | 3 |
| **WA** | 72 | 8 | 91 | 12 | 72 | 5 | 18 | 0 | 42 | 0 | 42 | 0 |

# Surveillance activities

## National transmissible spongiform encephalopathies surveillence program

Australia is free of bovine spongiform encephalopathy (BSE) and scrapie, which are grouped together as transmissible spongiform encephalopathies (TSEs). However, the OIE International Animal Health Code on BSE requires that countries claiming to be free of TSEs have in place a surveillance system to detect BSE and scrapie should they occur.

Government authorities have responded to prevent the occurrence of BSE in Australia through a variety of measures and these were described in a submission to the Scientific Veterinary Committee of the European Commission in September 1997. In its assessment of Australia's submission, the Committee noted that Australia was moving to comply with the OIE Code on BSE surveillance and intended to take a similar approach to surveillance for scrapie.

The National Transmissible Spongiform Encephalopathy Surveillance Program (NTSESP) is an integrated national program jointly funded by industry and governments to demonstrate Australia's ongoing freedom from BSE and scrapie, and to provide early detection of those diseases should they occur. The program is managed by the Australian Animal Health Council Limited. Further information about the program can be found in *AHSQ* Vol. 2 Issue 4 or on the Internet at www.brs.gov.au/aphb/ntsesp.

During 1998, 353 cattle and 282 sheep with progressive disease or clinical signs meeting the guidelines were investigated. TSEs were ruled out for 23 cattle and 7 sheep on the basis of their recovery after treatment. A further 21 cattle and 4 sheep had brains collected that were not suitable for laboratory examination. All the rest were negative.

*Chris Baldock, Manager NTSESP*

## National Residue Survey

Of 3995 samples tested during the quarter for agricultural and veterinary chemicals, 20 (0.5%) had residues above the maximum residue limit (MRL). Of the 16 pig samples with antimicrobial residues above MRL, 14 were for oxytetracycline and chlortetracycline — all below the NRA-recommended MRLs of 0.60 mg/kg in kidney. These limits have not yet been adopted into the Australian Food Standards Code. The two remaining pig antimicrobial non-conformances were for dihydrostreptomycin (0.66 mg/kg) and sulfadimidine (0.19 mg/kg). Other residues above MRL were chlorpyrifos (0.19 mg/kg) in a pig, ivermectin (0.036 mg/kg) in a sheep and two instances of flumethrin (0.08 and 0.10 mg/kg) in cattle samples. Again the latter two are technical non-conformances, as they are below the NRA-recommended MRL of 0.20 mg/kg, which has yet to be adopted into the Food Standards Code.

**Table 7: National Residue Survey, 1 January to 31 March 1999**

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

| | NSW | | NT | | QLD | | SA | | TAS | | VIC | | WA | | AUS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Anthelmintics** | | | | | | | | | | | | | | | | |
| cattle | 0 | 68 | 0 | 1 | 0 | 67 | 0 | 9 | 0 | 4 | 0 | 49 | 0 | 9 | 0 | 207 |
| pigs | 0 | 18 | 0 | 0 | 0 | 26 | 0 | 7 | 0 | 1 | 0 | 18 | 0 | 11 | 0 | 81 |
| sheep | 1 | 133 | 0 | 0 | 0 | 15 | 0 | 57 | 0 | 13 | 0 | 102 | 0 | 79 | 1 | 399 |
| other | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 6 |
| Total | 1 | 221 | 0 | 1 | 0 | 108 | 0 | 74 | 0 | 18 | 0 | 172 | 0 | 99 | 1 | 693 |
| **Antimicrobials** | | | | | | | | | | | | | | | | |
| cattle | 0 | 150 | 0 | 1 | 0 | 102 | 0 | 40 | 0 | 10 | 0 | 73 | 0 | 13 | 0 | 389 |
| pigs | 4 | 82 | 0 | 0 | 2 | 74 | 1 | 37 | 0 | 1 | 9 | 105 | 0 | 47 | 16 | 346 |
| sheep | 0 | 48 | 0 | 0 | 0 | 13 | 0 | 25 | 0 | 7 | 0 | 41 | 0 | 27 | 0 | 161 |
| other | 0 | 3 | 0 | 0 | 0 | 11 | 0 | 3 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 21 |
| Total | 4 | 283 | 0 | 1 | 2 | 200 | 1 | 105 | 0 | 18 | 9 | 223 | 0 | 87 | 16 | 917 |
| **Growth promotants** | | | | | | | | | | | | | | | | |
| cattle | 0 | 178 | 0 | 2 | 0 | 139 | 0 | 24 | 0 | 24 | 0 | 119 | 0 | 36 | 0 | 522 |
| pigs | 0 | 13 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 22 |
| sheep | 0 | 67 | 0 | 0 | 0 | 4 | 0 | 30 | 0 | 6 | 0 | 55 | 0 | 43 | 0 | 205 |
| other | 0 | 2 | 0 | 0 | 0 | 9 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 15 |
| Total | 0 | 260 | 0 | 2 | 0 | 155 | 0 | 58 | 0 | 30 | 0 | 178 | 0 | 81 | 0 | 764 |
| **Insecticides** | | | | | | | | | | | | | | | | |
| cattle | 1 | 184 | 0 | 0 | 1 | 147 | 0 | 34 | 0 | 25 | 0 | 129 | 0 | 31 | 2 | 550 |
| feral | 0 | 5 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| pigs | 1 | 19 | 0 | 0 | 0 | 11 | 0 | 4 | 0 | 2 | 0 | 18 | 0 | 14 | 1 | 68 |
| sheep | 0 | 235 | 0 | 0 | 0 | 29 | 0 | 103 | 0 | 23 | 0 | 186 | 0 | 125 | 0 | 701 |
| other | 0 | 10 | 0 | 1 | 0 | 12 | 0 | 13 | 0 | 2 | 0 | 3 | 0 | 1 | 0 | 42 |
| Total | 2 | 453 | 0 | 1 | 1 | 209 | 0 | 154 | 0 | 52 | 0 | 336 | 0 | 171 | 3 | 1376 |
| **Metals** | | | | | | | | | | | | | | | | |
| cattle | 0 | 37 | 0 | 0 | 0 | 17 | 0 | 2 | 0 | 1 | 1 | 14 | 0 | 0 | 1 | 71 |
| pigs | 2 | 8 | 0 | 0 | 1 | 11 | 0 | 5 | 0 | 0 | 0 | 8 | 0 | 5 | 3 | 37 |
| sheep | 2 | 25 | 0 | 0 | 0 | 1 | 1 | 13 | 0 | 6 | 1 | 13 | 8 | 20 | 12 | 78 |
| other | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 3 | 7 |
| Total | 4 | 70 | 0 | 1 | 3 | 32 | 1 | 22 | 0 | 7 | 3 | 36 | 8 | 25 | 19 | 193 |
| **Miscellaneous** | | | | | | | | | | | | | | | | |
| cattle | 0 | 48 | 0 | 0 | 0 | 50 | 0 | 8 | 0 | 6 | 0 | 33 | 0 | 2 | 0 | 147 |
| sheep | 0 | 31 | 0 | 0 | 0 | 1 | 0 | 10 | 0 | 7 | 0 | 23 | 0 | 16 | 0 | 88 |
| other | 0 | 1 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 10 |
| Total | 0 | 80 | 0 | 0 | 0 | 57 | 0 | 18 | 0 | 16 | 0 | 56 | 0 | 18 | 0 | 245 |

Further information about the National Residue Survey (NRS) can be found on the worldwide web at http://www.brs.gov.au/residues/residues.html where there are sections on:

- About the National Residue Survey
- NRS staff contacts
- NRS 1997–98 Annual Report (Summary)
- NRS 1997 Results (Summary)
- NRS recent publications and papers
- Extension materials for residues in meat
- Frequently asked questions
- Information for laboratories
- Associated web sites

Full versions of Annual and Results Reports are available on request from:

Dr Rusty Branford,
NRS, National Offices of Animal and Plant Health and Food Safety,
GPO Box 858, Canberra, ACT 2601
Phone (02) 6272 5096
Fax (02) 6272 4023

## Zoonoses

The National Notifiable Diseases Surveillance System of the Communicable Diseases Network Australia New Zealand collects statistics about many human diseases. *Communicable Diseases Intelligence* (CDI) is accessible on the internet (at http://www.health.gov.au/pubhlth/cdi/cdihtml.htm). Table 8 summarises some of the information for zoonoses.

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

**Table 8: Notifications of zoonotic diseases in humans**

| Disease | Q1-98 | Q2-98 | Q3-98 | Q4-98 | Q1-99 | Current quarter | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Australia | | | | AUST | ACT | NSW | NT | QLD | SA | TAS | VIC | WA |
| **Brucellosis** | 13 | 50 | 56 | 14 | 5 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 |
| **Hydatidosis** | 9 | 71 | 74 | 13 | 6 | 0 | 0 | 0 | 2 | 0 | 0 | 4 | 0 |
| **Leptospiros** | 40 | 175 | 178 | 68 | 99 | 0 | 12 | 1 | 73 | 2 | 0 | 10 | 1 |
| **Listeriosis** | 18 | 63 | 41 | 15 | 14 | 0 | 6 | 0 | 1 | 0 | 0 | 5 | 2 |
| **Ornithosis** | 5 | 43 | 38 | 28 | 17 | 0 | 0 | 0 | 0 | 0 | 1 | 14 | 2 |
| **Q fever** | 114 | 685 | 680 | 148 | 128 | 0 | 39 | 0 | 84 | 1 | 0 | 3 | 1 |

## Salmonella surveillance

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

Quarterly newsletters and annual reports of both human and non-human isolates are published, and detailed data searches are provided on request to NSSS. Table 9 summarises *Salmonella* isolations from animals notified to NSSS for the quarter

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

**Table 9: Salmonella notifications, 1 January to 31 March 1999**

| Serovars | avian | bovine | canine | equine | feline | ovine | porcine | other | Total |
|---|---|---|---|---|---|---|---|---|---|
| **S. bovismorbificans** | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 |
| **S. dublin** | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| **S. infantis** | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 3 |
| **S. typhimurium** | 4 | 22 | 5 | 5 | 0 | 10 | 12 | 17 | 75 |
| **Other** | 6 | 10 | 4 | 6 | 3 | 1 | 14 | 31 | 75 |
| **Total** | 11 | 57 | 10 | 11 | 3 | 15 | 27 | 48 | 182 |

## Northern Australia Quarantine Strategy

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

A review of NAQS by the Quarantine and Exports Advisory Council was completed in October 1998 and noted the considerable achievements of NAQS. It recommended continuation of the program at the 1998–99 level of funding for at least the next five years. The review found that the program is effective in its efforts to protect Australia's animal and plant health and the environment from threats arising from our geographical location. The Government's 1999–2000 Budget anounced that $12 million will be provided over the next three financial years to enable current NAQS activity levels to be maintained.

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

| | Jan – Mar 98 | | Apr – Jun 98 | | Jul – Sep 98 | | Oct – Dec 98 | | Jan – Mar 99 | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Tested | +ve | Tested | +ve | Tested | +ve | Teste | +ve | Tested | +ve | |
| Aujeszky's disease | 0 | 0 | 58 | 0 | 59 | 0 | 78 | 0 | 0 | 0 | |
| Avian influenza | 0 | 0 | 157 | 0 | 35 | 0 | 296 | 0 | 0 | 0 | |
| Classical swine fever | 27 | 0 | 70 | 0 | 57 | 0 | 78 | 0 | 0 | 0 | |
| Infectious bursal disease | 8 | 0 | 147 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Japanese encephalitis | 556 | 36 | 718 | 21 | 61 | 0 | 228 | 0 | 211 | 0 | a |
| Old world screw-worm | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | b |
| Newcastle disease | 12 | 0 | 167 | 0 | 35 | 5 | 16 | 0 | 0 | 0 | c |
| Porcine reproductive and respiratory syndrome | 0 | 0 | 58 | 0 | 57 | 0 | 18 | 0 | 0 | 0 | |
| Surra | 236 | 0 | 189 | 0 | 89 | 0 | 177 | 0 | 31 | 0 | |
| Swine influenza | 0 | 0 | 58 | 0 | 58 | 0 | 78 | 0 | 0 | 0 | |
| Transmissible gastroentertis | 0 | 0 | 58 | 0 | 58 | 0 | 78 | 0 | 0 | 0 | |
| Trichinellosis | 16 | 0 | 22 | 0 | 0 | 0 | 42 | 0 | 0 | 0 | |

### Notes

**a** In previous years, animals at sentinel sites on islands in the Torres Strait, but not the Australian mainland, have shown seroconversions during the latter part of the wet season (March–April). In March 1998, seroconversions occurred at a number of sentinel sites on islands in the Torres Strait (Saibai, Badu, Moa and Mabuiag), and for the first time on the mainland, near Bamaga, at the tip of Cape York Peninsula.

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

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

*Contact: David Banks, AQIS*

## Rabbit calicivirus

In arid/semi-arid areas of Australia that receive less than 300 mm of annual rainfall, the monitoring program for rabbit calicivirus disease (RCD) found that 73% of intensive and broadscale monitoring sites/subsites recorded rabbit population declines of greater than 65%. Only 46% of sites in wetter areas recorded similar declines.

The seventh report of the RCD Monitoring and Surveillance and Epidemiology Programs was released in December 1998. The results from the 1996–98 Program are being written up into four final RCD Program Reports, one each on the themes of virus spread and release, integrated rabbit control, biodiversity and agricultural production. There will also be an Overview Report, which will draw together the key findings from these reports. These RCD Program Reports are due to be completed by June 1999.

*For further information contact Dr Helen Neave, Project Officer RCD Monitoring and Surveillance program, phone (02) 6272 5007*

## Suspect exotic disease investigations

There were 27 exotic disease investigations reported during the quarter, as shown in Table 11

**Table 11: Suspect exotic disease investigations from 1 January to 31 March 1999**

| Disease | Species | State | Reponse (see key) | Finding |
|---|---|---|---|---|
| Australian bat lyssavirus | canine | NT | 3 | Negative |
| Avian influenza | avian | QLD | 2 | Negative |
| Avian influenza | avian | QLD | 2 | Infectious coryza |
| Avian influenza | avian | QLD | 3 | Marek's Disease |
| Avian influenza | avian | QLD | 3 | Enteritis |
| Avian influenza | avian | QLD | 2 | Mycoplasmosis |
| Avian influenza | avian | WA | 2 | Vitamin E deficiency |
| Contagious bovine pleuropneumonia | bovine | WA | 2 | Pasteurellosis |
| Contagious caprine pleuropneumonia | caprine | WA | 2 | Mycoplasma arthritis |
| Foot-and-mouth disease | caprine | QLD | 2 | Scabby mouth (orf) |
| Foot-and-mouth disease | porcine | QLD | 1 | Contact dermatitis |
| Goat pox | caprine | QLD | 6 | Orf and staph. dermatitis |
| Maedi–visna | ovine | WA | 2 | Interstitial pneumonia |
| Newcastle disease | avian | NSW | 2 | Negative |
| Newcastle disease | avian | NSW | 7 | Newcastle disease |
| Newcastle disease | avian | NSW | 3 | Negative |
| Newcastle disease | avian | VIC | 1 | Pasteurella |
| Newcastle disease | avian | VIC | 1 | Bacterial infection/hyperthermia |
| Rabies | bovine | TAS | 3 | Listerial encephalitis |
| Rabies | canine | NSW | 3 | Pegative |
| Rabies | equine | QLD | 2 | Hepatoencephalopathy |
| Rabies | feline | VIC | 1 | Negative |
| Scrapie | ovine | QLD | 2 | Scrapie excluded |
| Screw-worm fly | canine | QLD | 2 | Negative |
| Screw-worm fly | canine | NT | 2 | Negative |
| Varroasis | apine | VIC | 1 | Sticky pollen |
| Vesicular stomatitis | ovine | TAS | 2 | Mucosal disease |

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

# NAHIS contacts

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

| Name | Role | Phone | Fax | e-mail |
|---|---|---|---|---|
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| David **Banks** | Northern Australia Quarantine Strategy | 02 6272 5444 | 02 6272 3399 | David.Banks@aqis.gov.au |
| Janet **Berry** | Qld State Coordinator | 07 4658 4414 | 07 4658 4433 | BerryJ@dpi.qld.gov.au |
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| John **Galvin** | Vic. State Coordinator | 03 5430 4517 | 03 5430 4505 | john.galvin@nre.vic.gov.au |
| Graeme **Garner** | Commonwealth NAHIS Coordinator | 02 6272 5369 | 02 6272 4533 | graeme.garner@affa.gov.au |
| Ana **Herceg** | Communicable Diseases Intelligence | 02 6289 1555 | 02 6289 7791 | http://www.health.gov.au |
| David **Kennedy** | Ovine Johne's Disease Coordinator | 02 6365 6016 | 02 6365 6088 | ausvetdk@netwit.net.au |
| Diane **Lightfoot** | National Salmonella Surveillance Scheme | 03 9344 5701 | 03 9344 7833 | d.lightfoot@ microbiology.unimelb.edu.au |
| Bill **Matthews** | National Granuloma Submission Program | 02 6272 5042 | 02 6272 3307 | William.Matthews@aqis.gov.au |
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