

# National Centre for Disease Investigation

## Survey/project reports

### Arbovirus surveillance

Surveillance for arboviruses has been undertaken since 1990 and uses sentinel cattle herds at sites most likely to allow *Culicoides* survival should the midges arrive in this country. During the 2003 arbovirus vector season serum samples from 17 sentinel cattle herds were tested for antibody to Akabane disease, bluetongue, epizootic haemorrhagic diseases and Palyam group viruses. All were negative in all tests.

### Typing ruminant herpesvirus isolates

Over the year five recent bovine herpesvirus type 1 (BHV-1) virus isolates were typed using restriction endonuclease analysis. All viruses showed a typical BHV 1.2b pattern.

### Genotyping pestivirus isolates

Recent pestivirus isolates are being genotyped. Ten isolates of bovine virus diarrhoea (BVD) virus from 2003 were sequenced and all were found to be type 1 virus. No BVD type 2 viruses were detected.

### Detection of *Pasteurella multocida* from abattoir pigs

This project was extended to test the isolates for the presence of the tox-A gene. This gene is responsible for production of the toxin that causes progressive atrophic rhinitis. A total of 53 isolates were tested in a PCR for tox-A gene but all were negative.

### Survey of feral pigeons for selected avian viruses

Pigeons have been identified as a possible risk factor for the spread of serious avian viral diseases. Feral pigeons from different areas of New Zealand were sampled and tested for the presence of a number of avian viral diseases. Serological tests for avian influenza (569 birds) and Newcastle disease (552 birds) were all negative indicating no exposure to these viruses. A total of 90 of 468 (or 19.2%) birds did have antibodies against avian adenoviruses. It is planned to test the birds for pigeon herpesvirus antibodies. Detailed results will be presented in the December issue of *Surveillance*.

### Development of PCR tests for avian poxviruses

Two PCR tests were developed using avian poxviruses from the NCDI reference collection. One PCR amplified the 4b-core gene of fowlpox virus and was able to detect all poxvirus isolates from domestic poultry and wild birds. Sequencing showed >95% homology between the wild bird poxviruses tested but only a 70-77% homology with fowl and turkey poxviruses.

The second PCR detected only the poxviruses from wild birds but

not fowl or turkey poxviruses. Poxviruses from canary, hedge sparrow, godwit and robin were found to be closely related.

### Lymphoblastoid lymphomas of thymic origin in salmon

A study on the cause of these tumours in sockeye salmon is in progress. A retroviral aetiology is suspected and attempts are being made to culture the virus using lymphocyte cells, visualise it using electron microscopy and transmit it by inoculating healthy sockeye salmon.

### Diseases and microorganisms identified for the first time

#### Post-weaning multisystemic wasting syndrome

Post-weaning multisystemic wasting syndrome (PMWS) was diagnosed for the first time in September 2003. The diagnosis was based on clinical symptoms, gross lesions, histopathology and positive immunohistochemistry for porcine circovirus type 2. By April 2004, 23 piggeries had been confirmed as infected, or suspected of being infected, with PMWS. Most cases are in the Waikato region of the North Island.

#### White spot virus in prawns

White spot prawn virus, which is exotic, was detected in frozen prawns imported from Thailand. The diagnosis was based on the typical gross lesions and a positive result in a PCR test.

#### Psittacine poxvirus

Psittacine poxvirus was identified in captive rosellas with lesions around the beak, eyelids, mouth and oesophagus. Typical poxvirus histopathology was seen including numerous Bollinger bodies. PCR testing on wax blocks of affected tissues (the only available samples) confirmed the presence of an avian poxvirus with a high sequence homology with other wild bird poxviruses. A second PCR targeting a different region of the core 4b gene showed a lower sequence homology (<80%) with other wild bird poxviruses, confirming this virus was a separate species.

### Staff publications in scientific and technical journals

Berthe FCJ, Hine PM. *Bonamia exitiosa* Hine et al., 2001 is proposed instead of *B. exitiosus* as the valid name of *Bonamia* sp. infecting flat oysters *Ostrea chilensis* in New Zealand. *Diseases of Aquatic Organisms* 57, 181, 2003.

Cochennec-Laureau N, Reece KS, Berthe FCJ, Hine PM. *Mikrocytos roughleyi*/taxonomic affiliation leads to the genus *Bonamia* (Haplosporidia). *Diseases of Aquatic Organisms* 54, 209-17, 2003.

Diggles BK, Cochennec-Laureau N, Hine PM. Comparison of diagnostic techniques for *Bonamia exitiosus* from flat oysters *Ostrea chilensis* in New Zealand. *Aquaculture* 220, 145-56, 2003.

Duignan P, Horner G, O'Keefe J. Infectious and emerging diseases of bats, and health status of bats in New Zealand. *Surveillance* 30(1), 15-8, 2003.

Horner G, Jamaludin R. Experimental infection of calves with *Mycoplasma mycoides* subspecies *mycoides* Large Colony. *Surveillance* 30(1), 6-8, 2003.

King C, Stone M, Wang J. An outbreak of disease caused by a psittacinepoxvirus in rosellas. *Surveillance* 30(3), 11-3, 2003.

Loth L. Pacheco's disease ruled out in a Goffin cockatoo. *Surveillance* 30(3), 13-4, 2003.

**Mackereth G.** Reaffirming New Zealand's freedom from bovine brucellosis. *Surveillance* 30(3), 3-6, 2003.

**Stone M, Mackereth G.** Suspected human dirofilariasis (*Dirofilaria immitis*) ruled out. *Surveillance* 30(3), 14-7, 2003.

Taylor N, McLeod A, Thuy N, **Stone M**, Binh V, Lan L, Dung D, Barwinek F. Examining the options for a livestock disease-free zone in the Red River Delta of Vietnam. *Strengthening Veterinary Services in Vietnam ALA/96/20*. November 2003.

**Tham K-M, Hansen M.** Detection of porcine circovirus types 1 and 2 in abattoir-slaughtered pigs in New Zealand. *Surveillance* 30(1), 3-5, 2003.

Thornton R, **Stanislawek W.** Pacheco's disease ruled out in at-risk smuggled parrots. *Surveillance* 30(3), 10-2, 2003.

## International conferences and training courses attended

Davies H. London Business School Senior Executive Programme, England, October 2003.

Horner G. Visit to the World Reference Laboratory for FMD, Pirbright, England, August 2003.

Horner G. Attended 6th International Congress of Veterinary Virology, St Malo, France, August 2003.

Kittelberger R. Attended Bio-Rad TSE ELISA training and a LIMS meeting at the Australian AHL, Geelong, November 2003.

Kittelberger R. Attended Bio-Rad 3rd International TSE Conference, Paris, and visited Bio-Rad Laboratories, Marnes-la-Coquette, France, December 2003.

Loth L. Attended Australian College of Veterinary Scientists conference, Surfers Paradise, Australia, July 2003.

Mackereth G, Bingham P. Attended 10th International Society of Veterinary Epidemiology and Economics (ISVEE) conference, Vina Del Mar, Chile, November 2003.

Mackereth G. Attended post-ISVEE course on advanced surveillance techniques.

O'Keefe J. Management Development Programme, Mt Eliza, Victoria. March to May, 2003

O'Keefe J. Making Critical Financial Decisions, University of Queensland, December 2003.

Stone M. Trainer at a course titled 'Risk analysis applied to disease free zones' for Vietnamese veterinarians, Strengthening Veterinary Services in Vietnam project, Hanoi, 2003.

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