National Centre for Disease Investigation report

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 2001 arbovirus vector season, serum samples from 16 sentinel cattle herds were tested for antibody to Akabane disease, bluetongue, epizootic haemorrhagic diseases and Palyam group viruses. All were negative in all tests.

Next season it is intended to add Ross River virus to the panel because of the recent arrival in New Zealand of the southern salt marsh mosquito.

Pig pathogens project

This abattoir survey is aimed at the detection of pig enteroviruses, pig circoviruses and *Pasteurella multocida* in pigs. Most tissues were found to contain pig circoviruses with circovirus type 2 predominating. *Pasteurella multocida* was isolated from lung, tonsil and nasal swabs with a farm prevalence rate varying from 1.4% to 32%. The isolates have been sent to the Animal Research Institute in Brisbane for serotyping and biotyping. No pig enteroviruses have yet been isolated.

Influenza virus in pigs

Nasal swabs and blood samples were collected from abattoirs and from two pig farms. Most pigs were positive for influenza A antibody and probably because of this no viruses were isolated.

This winter (2002) it is planned to take weekly samples from young pigs from one or two piggeries in the hope of isolating virus before the pigs seroconvert. The objective is to type any viruses isolated to show that they are human, rather than pig, strains of influenza virus.

Role of *Mycoplasma conjunctivae* in ovine infectious keratoconjunctivitis

This organism was demonstrated in eye swabs from three sheep flocks with infectious keratoconjunctivitis (pink eye), two in the North Island and one in the South Island.

Although culture was unsuccessful, the organism was detected using group-specific PCR and a nested PCR carried out by a collaborating Swiss laboratory. Specific antibodies were detected in most affected sheep, using an ELISA.

Genotyping pestivirus isolates

An ongoing project to genotype recent isolates of pestivirus resulted in sequencing of seven isolates of bovine virus diarrhoea (BVD) virus, all found to be type 1 virus. No BVD type 2 viruses were detected.

Diseases and microorganisms identified for the first time

Melissococcus pluton

This bacterium, the cause of European foulbrood, was isolated from a batch of royal jelly that was imported from China and was being held in quarantine. The organism was identified by its cultural characteristics and was confirmed by PCR.

Mycoplasma bovoculi

An outbreak of bovine infectious keratoconjunctivitis in a dairy herd immunised with *Moraxella bovis* vaccine was investigated. The animals did not respond to penicillin as usual but did respond to broad-spectrum antibiotics. *Mycoplasma bovoculi* was detected from the conjunctival swabs collected from affected animals.

Mycoplasma conjunctivae

During an investigation to determine the role of this organism in ovine infectious keratoconjunctivitis (pink eye), *M conjunctivae* was detected by PCR in two sheep flocks in the North Island and one in the South Island.

Mycoplasma mycoides subspecies *mycoides* (Large Colony)

This organism was isolated from goat kids and young calves fed unpasteurised goats' milk. The disease manifest as polyarthritis in goats and calves, and mastitis in does. The isolates were made from joint fluid and milk. The identification of the organisms was confirmed by the Veterinary Laboratory Agency, Weybridge, using growth inhibition with reference antiserum, PCR (Cap-21 gene fragment), and restriction enzyme analysis of the PCR product with Asn 1.

Pig circovirus type 2

During the pig pathogen project, tissue samples were collected from an abattoir and tested for pig circoviruses (PCV) by PCR. Most samples (88%) were positive in a generic PCR for pig circoviruses and sequencing of selected samples showed all except one were positive for PCV-2.

Staff publications in scientific and technical journals

Bernard H, Bolger P, Stone M, **Thornton R**. The outbreak of *Varroa destructor* in New Zealand bees: delimiting survey results and management options. Surveillance 28(3), 3-5, 2001.

Cochennec-Laureau N, Le Roux F, Berthe, F, **Hine M**. Could *Mikrocytos roughleyi* be a mis-classified haplosporidian? Aquaculture 2000: Book of Abstracts, World Aquaculture Society, Louisiana State University, Baton Rouge, USA, p 61, 2001.

Diggles B, **Hine P**, Handley S, Boustead N. A handbook of diseases of importance to aquaculture in New Zealand. NIWA Information and Technology Series, 2001.

Hine P, Cochennec-Laureau N, Berthe FCJ. *Bonamia exitiosus* n. sp. (Haplosporidia) infecting flat oysters *Ostrea chilensis* in New Zealand. Diseases of Aquatic Organisms 47, 63-72, 2001.

Hine P, Bower S, Meyer G, Cochennec-Laureau N, Berthe F. The ultrastructure of *Mikrocytos mackini*, the cause of Denman Island disease in oysters *Crassostrea* spp. and Ostrea spp. in British Columbia, Canada. Diseases of Aquatic Organisms 45, 215-27, 2001.

Kittelberger R. Bovine spongiform encephalopathy (BSE) laboratory diagnosis. MAF VA Technical Bulletin (2), 14-5, 2001.

Mackereth G, Hearnden M. An integrated response to the establishment of the exotic mosquito *Aedes (Ochlerotatus) camptorhynchus* in Napier. Surveillance 28(3), 14-5, 2001.

Motha J, Pannett G, Atkinson J. Merits of a surveillance programme used in the eradication of Aujeszky's disease. Surveillance 28(3), 11-3, 2001.

Motha J, Jenner J. Serological relatedness of cervine herpesvirus-1 and bovine herpesvirus-1 and the prevalence of cervine herpesvirus-1 infection in farmed deer in New Zealand. New Zealand Veterinary Journal 49, 162-3, 2001.

Reed C, **Gibbons A, Motha M.** A survey and evaluation of serological, isolation and antigen detection tests for *Chlamydia psittaci* in New Zealand feral pigeons and native psittacines. Proceedings of Veterinary Conservation Biology: Wildlife Health and Management in Australasia, Sydney, pp 151-6, 2001.

Stanislawek W. Serological survey for influenza A in New Zealand pigs. Surveillance 28(2), 7-8, 2001.

Stanislawek W. Avian leucosis subgroup J in New Zealand. Surveillance 28(4), 11-2, 2001.

Stanislawek W, Meers J, Wilks C, **Horner G, Morgan C**, Alexander D. A survey for paramyxoviruses in caged birds, wild birds, and poultry in New Zealand. New Zealand Veterinary Journal 49, 18-23, 2001.

Tisdall D, Rowe S. Isolation and characterisation of cervine herpesvirus-1 from red deer semen. New Zealand Veterinary Journal 49, 111-4, 2001.

Vizcaíno N, **Kittelberger R**, Cloeckaert A, Marín C, Fernández-Lago L. Minor nucleotide substitutions in the omp31 gene of *Brucella ovis* result in antigenic differences in the major outer membrane protein that it encodes compared to those of the other *Brucella* species. Infection and Immunity 69, 7020-8, 2001.

International conferences and training courses attended

Bosson M. Australian Animal Health Laboratory exotic disease course, October 2001.

Bosson M, Davies H, King CB, King CM, Mackereth G, Rowe S, Thornton R. Attended the FMD response in United Kingdom during March to May, 2001

Hine PM.10th International Conference on Diseases of Fish and Shellfish, Dublin, Ireland, September 2001.

Gibbons A. Visits to the National Centre for Foreign Animal Diseases (NCFAD), Winnipeg, Canada; the World Reference Laboratory for FMD, Pirbright, England; and the Veterinary Laboratory Agency, Weybridge, England, November 2001.

Gibbons A. Course on Containment Level 3 Facilities. Laboratory Security Health Canada and Canadian Food Inspection Agency, Ottawa, Canada, November 2001.

Horner G. 3rd Veterinary Virology in Australia Conference, Sydney, September 2001.

Jamaludin R. AFDL/AFFA Fish Diseases Workshop, Vibriosis Isolation and Identification Technique, Geelong, February 2001.

Jamaludin R. *Pasteurella multocida* serotyping at Animal Research Institute, Yeerongpillay, Brisbane, February 2001.

Jamaludin R. Sensitive detection of fish pathogens by selective-enrichment and high-throughput one tube PCR-ELISA, Tasmanian Aquaculture and Fisheries Institute and DPIWE, Tasmania, November 2001.

Kittelberger R. International TSE Diagnostic Meeting, Paris, France, and visit to the Bio-Rad production plant at Steenvorde, France, November 2001.

Mackereth G. UK GISVET Conference, Lancaster University, England, September 2001.

Motha J. International conference on Arbovirus and West Nile Virus, New York, April 2001.

Thornton R. Visit to Fire Ant Control Centre, Brisbane, August, 2001.

Wang J. Australian Animal Health Laboratory FMD ELISA training course, November 2001.

Gary Horner

National Centre for Disease Investigation

MAF Operations

Email: hornerg@maf.govt.nz