EXERCISE ELEUSIS REPORT

Exercise Eleusis was a national simulation of a hypothetical avian influenza outbreak in three southern states that ran for three days from 29th November. It was designed to test the national capability to manage an emergency zoonotic disease by industry and government. The Northern Territory (NT) was a non-infected jurisdiction and was required to convene the State Disease Control Centre Headquarters (SDCHQ) and upper level arrangements including a whole-of-government Incident Management Team (IMT). Approximately 30 people were involved, with two-thirds from the Department of Primary Industry, Fisheries and Mines (DPIFM).

The exercise was designed to test:
- the effective integration of nation-wide emergency zoonosis arrangements between industry and government, State/Territory government and Australian Government, agriculture and health;
- public communication;
- disease control policies and strategies.

The Territory was able to respond adequately, but a number of valuable lessons were learnt.

Despite good relations with the local Department of Health staff, we now better understand the different operating philosophies and arrangements in that sector compared to agriculture. Adequate staff numbers with appropriate experience is a key issue for the Department of Health.

The operation of a whole-of-government IMT is a necessary part of Northern Territory emergency response arrangements for communication and coordination of resources and activities. Membership will need to be expanded in a real response. DPIFM's plans will be updated to take this and other changes into account. Other committee arrangements functioned as per the AUSVETPLAN Emergency Response Agreement.

The media and public relations team performed well under extreme pressure which is reassuring given their diverse employment backgrounds and a lack of experience with agricultural disasters. An exercise website was created and will be retained as a template for future responses. The need for local call centre arrangements was examined and will be planned for in the future.

For the NT, it was a valuable test of current arrangements at SDCHQ level and above. Despite problems with the conduct of a mid-play exercise (started on day five of the outbreak), exercise artificiality (not knowing how to play the game) and differing levels of experience, there are a number of positive outcomes for emergency response preparedness.

There is now a much better understanding of what would be required if a similar high-profile emergency disease were detected in another part of Australia. The response team will need to be bigger to be functional and sustainable. Critical issues include trained staff resources to maintain a seven-day a week effort. A manpower plan was attempted during the exercise and will be the basis for future training efforts. By necessity, emergency response training will initially select people from across the department in an all-hazards, 'first response team' approach. All exercise participants benefited from the experience.

The building provided for the exercise was found to be just adequate and requirements have been noted for future plans. It is now accepted that a better facility is necessary, as current office space and other options are too much of a compromise.

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NORTHERN TERRITORY EXPERIENCE HELPS CANADA ERADICATE TUBERCULOSIS IN BISON

Kel Small attended a Bison Diseases Technical Workshop held at the University of Alberta in Edmonton, Canada, 28-29 October 2005. The subject of his presentation to the workshop was “Depopulation for Disease Control” in which he presented the Northern Territory experience with eradicating infection caused by Mycobacterium bovis from free-ranging populations of cattle, water buffalo and pigs.

Attendance at the workshop was sponsored by Parks Canada, whose objective was to explore the ecological implications and technical feasibility of eradicating bovine tuberculosis (TB) and brucellosis through depopulation within and around Wood Buffalo National Park (WBNP), followed by replacement with disease-free wood bison, to eliminate the risk of transmission of these diseases to domestic cattle, wood bison and humans.

Canada has declared its cattle herds free of both diseases and Wood Buffalo National Park is now one of the last remaining wildlife reservoirs for tuberculosis and brucellosis. The wood bison is an endangered species in Canada but a number of disease-free herds which have been developed surrounding WBNP, are now threatened with becoming infected. A 1990 Report of the Environmental Assessment Panel on Northern Diseased Bison recommended depopulation followed by replacement with disease-free wood-bison. The workshop was strictly focused on scientific aspects of the feasibility of a depopulation / repopulation scenario and did not address whether or not this is a desirable or preferred option.

Australia is the only country in the world which has used the depopulation of free-ranging herds to successfully eradicate tuberculosis. Details of the depopulation activities carried out over a 13-year period in the Darwin area were presented to illustrate the operational costs and time frame associated with successful TB eradication in the Northern Territory. Workshop participants used the information to determine the probability of achieving success in bison if depopulation and repopulation were implemented.

The bison in Wood Buffalo National Park have a tuberculosis prevalence of 50 percent and a brucellosis prevalence of 30 percent. The population distribution extends well beyond the boundary of the park, which has an area of 44,000 sq km. Travel across the park is very difficult during summer but good in winter when snow transport makes all areas easily accessible. Bison can be effectively tracked on the ground or from the air following fresh snowfalls. Discussion on repopulation focused on how to assess a disease-free herd and how to maintain genetic diversity.

Discussion on the ecological implications of depopulation and repopulation focused on modelling populations of animals and vegetation communities. There is heavy predation on bison by wolves in the park.

Following the workshop, a visit was made to the Elk Island National Park where disease-free wood bison could be sourced for repopulation purposes. Animal handling facilities have been built there, so that surplus bison can be safely yarded for

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The current Northern Territory Government Information Technology (IT) system performed well and with appropriate support will not be an issue. There is a recognised need for emergency response priority clauses in the next government IT contract to allow rapid creation and expansion of an IT network.

Most aspects of AUSVETPLAN were adequate but it was identified that there is a need to re-examine movement controls for avian influenza. Various aspects of information management were found to be less than ideal – this is also a national issue that requires a better solution. Dealing efficiently and effectively with high volumes of important information that arrive through several channels is a critical issue for a response. The Northern Territory was well served by the existing registry (files) system and dedicated staff.

A Territory and national debrief process has taken place to capture these and other lessons learnt and to contribute to the continuous improvement cycle for improved future responses. The challenge will be to find the resources to deal with some of the issues, a number of which will require a Northern Territory Government response. The next major exercise for the Northern Territory is planned for early 2007 and will be on classical swine fever of pigs, set in the coastal wetlands.

Kevin de Witte
Principal Veterinary Officer
8973 9758

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Bovine Syndromic Surveillance System (BOSSS) – A web tool designed to help diagnose cattle diseases in remote areas.

Bovine Syndrome Surveillance System (BOSSS) is a new web-based program being trialled for recording and analysing cattle disease information in remote regions of Australia. At present, producer reporting of cattle disease is sporadic. Producers are only likely to report disease if there is measurable economic loss, notifiable disease suspicion or producer interest. A three-year project trialling the BOSSS program will involve participants from remote areas in the Northern Territory, Western Australia, Queensland and South Australia. The Northern Territory surveillance group will include producers, government and private veterinarians and stock inspectors. The project aims to improve the frequency, quality and detail of information reported by producers. The program contains information on 1000 cattle diseases, including clinical signs, diagnosis, treatment and control, photo library of diseases, post-mortem guidelines and sample collection techniques. Information entered by users can be used to monitor disease history and frequency on properties, within regions and for disease surveillance across Australia. Unusual combinations of signs or change to the frequency of disease will generate a warning, which is important in the event of infectious or exotic disease occurrences.

The internet-based reporting system allows a disease observation report to be completed within a few minutes. The inclusion of a graphical interface allows users to click on the affected region of the body, with the appearance of a drop-down menu for selection and streamlining of clinical signs. The system is based on syndrome reporting rather than specific disease diagnosis and rules out diseases rather than ruling in one disease. Users receive a list of possible diagnoses ranked from most likely to least likely with associated risk levels of disease: contagious, zoonotic or exotic. The system provides recommendations based on information provided by the user, such as contacting a vet for assistance, post-mortem examination, specimen collection or rapid field tests.

As the International Animal Health Organisation places more stringent disease status demands on export cattle, there is a requirement for data to prove that Australia is free from disease. As a result, under-reporting of cattle disease may actually be detrimental to maintaining export markets. The intended outcome of introducing BOSSS to industry is that producer disease reporting will become a routine component of livestock management. Regular disease reporting by producers will allow Australia to demonstrate ongoing freedom from exotic disease and also ensure the detection of emerging disease and disease incursions at an early stage.

For more information or interest in participating in the project, please contact Sue Hourigan.

Sue Hourigan  
Regional Veterinary Officer, Katherine  
8973 9716

BOSSS

Bovine Syndromic Surveillance System

A web tool to help you diagnose disease

Australian Biosecurity Cooperative Research Centre for Emerging Infectious Disease
Cattle producers are major exporters. Their profitability and access to markets depends upon healthy cattle and, more importantly, demonstrating the health of their cattle to export markets.

*An effective disease surveillance system is vital.*

Current surveillance systems in remote beef producing areas use veterinarians to examine and collect samples from diseased cattle for testing. Unfortunately, a shortage of rural veterinarians, increased funding pressure on departmental agencies, and the large distances involved mean that this sort of surveillance is becoming less available and effective.

Large herd sizes in remote regions actually offer a solution to this problem. Stock workers on extensive Australian properties have observed significant numbers of animals, and have the capacity to detect and describe disease signs in affected cattle.

*Syndromic surveillance systems record the signs of disease - such as scouring, lameness, or breathing difficulty - enabling station managers and stockmen to report and investigate disease.*
BOSSS is a novel way of monitoring disease.

BOSSS is a live, web-based program developed to improve disease surveillance in remote areas of Australia. It contains information on 1000 cattle diseases (including exotic diseases), as well as educational material on disease signs, and post mortem and sample collection techniques.

BOSSS is simple to use, rapid - most cases take 2-3 minutes to investigate - and focused towards providing essential information to the manager. This includes material on specific diseases, further investigation, risk to human health, risk of further spread, and risk of exotic disease.

Data entry is simple and intuitive. A picture of the organs and structures of a cow are hyperlinked to the most common signs affecting that organ or body part. The user is asked questions such as “Is the cow coughing?” to enable the system to differentiate between short-listed diseases. BOSSS compares the selected signs to the database of diseases to identify the most likely causes of the symptoms.

Information available to users includes:
- Information on disease, and clinical signs
- Disease distribution maps
- Links to experts (such as vets and toxicologists) via a list server of registered experts
- Discussion board, allowing producers to email each other and experts
- Picture library
- Post mortem guide

Potentially zoonotic, exotic or contagious diseases are highlighted, and the user is warned to contact their relevant animal health officer to discuss the symptoms further. The disease diagnostic component was very well received by producers at its launch in Queensland in November 2004.
BOSSS will deliver benefits to producers, government departments, veterinarians, animal health workers and the beef industry:

- BOSSS will be an excellent source of up-to-date, accurate disease information that can be utilised by producers, private and government veterinarians, animal scientist and stock agents.
- BOSSS will provide individual producers with an active system for maintaining information on their herd's health, providing a way of investigating disease in herds.
- Producers will be guided towards veterinary services when necessary. Users will receive lists of possible diagnoses and risk levels of the disease being contagious, zoonotic or exotic.
- The syndrome data captured by BOSSS is unique in its extensive detail, providing highly sensitive detection of disease. Early detection of disease is vital, especially in the case of emergency disease.
- Data will be analysed statistically to provide evidence of disease freedom, vital to our export industries.

What support is available/will be provided for implementation?
Many stock observers will need to use the system for it to be effective. Registered users of BOSSS submit reports from diseased cattle as they observe them, or at least monthly. A local coordinator will be available to assist users of BOSSS with training and to answer questions. Your coordinator will be available through your local department of agriculture. Assistance will also be available online through a user's manual.

For more information about BOSSS contact:
Dr Richard Shephard
Phone: (03) 5147-1633
Email: rshephard@gippslandhi.coop
Advisory Visit to Veterinary Laboratories in Sabah

The visit was undertaken as part of the Memorandum of Cooperation between the Northern Territory of Australia Department of Primary Industry, Fisheries and Mines (DPIFM) and the Department of Veterinary Services and Animal Industries (Dovsai), Sabah, Malaysia, concerning Cattle Industry Development and Trade. The memorandum includes the provision of training programs for Dovsai officers conducted by DPIFM officers.

One of the training programs focuses on the development of a veterinary laboratory quality system at the Kepayan veterinary laboratory, Animal Disease Research Centre (ADRC) and accreditation to the international standard ISO/IEC 17025. The program also includes training of veterinary laboratory staff from Sabah at the NATA (National Association of Testing Authorities) accredited Berrimah Veterinary Laboratories (BVL).

During the last two years, two veterinarians from ADRC and one from the Tawau veterinary laboratory have visited BVL for two weeks each. The last two visitors also attended, as observers, the Darwin Disease Control Headquarters during the National Avian Influenza Exercise, Eleusis '05. My first visit to ADRC was in May 2004.

Most of the time, during this my second visit, was spent at the Kepayan laboratory near Kota Kinabalu advising staff on writing the quality system manuals. Considerable progress has been made since my last visit. One day was spent in Tawau, a harbour city in the southeast of Sabah near the Indonesian Kalimantan border. The veterinary laboratory in Tawau is newly built with limited equipment and an enthusiastic veterinarian in charge. This person also provides a clinical service and had to attend to an injured pigtail macaque after a hard day's work.

Highly pathogenic avian influenza (HPAI) is present in Kalimantan, according to the Sabahan authorities, and much effort goes into a major public awareness campaign in Sabah. The main worry is non-reporting of disease in village chickens and spread of the virus by fighting cocks associated with their illegal entry across the border or through Tawau harbour by illegal or legal immigrants, mainly palm oil plantation workers. Sabah farmers must report deaths in their chickens and Dovsai officers (including laboratory workers) try to investigate all deaths. This is mandatory if deaths exceed 3%. A simulation exercise for HPAI along the lines of Eleusis '05 is planned.

Anton Janmaat
Principal Veterinary Pathologist
8999 2240

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disease testing, before being moved to newly established herds. The cattle crush is located in a sealed building and is covered by an array of radiant heaters which protect the workers from the minus 40°C temperatures which prevail outside.

Despite the extreme differences in climate and the different species involved, the principles of tuberculosis eradication remain the same, and the success of the tuberculosis eradication program in the Northern Territory provides a benchmark for assessing the feasibility of a similar program of depopulation and repopulation in free-ranging bison populations.

Kel Small
Regional Veterinary Officer, Darwin
8999 2034

Tell us what you think!
Berrimah Veterinary Laboratories actively ask customers for feedback on its services. Please direct any comments to the Quality Manager, Dr Anton Janmaat.
Phone: 8999 2240 or Fax: 8999 2024
CVO report

Job Opportunities

During February a veterinary officer position based at Katherine will be advertised. The job is a field-based position providing disease surveillance, market access and disease control service to the cattle and other livestock industries. Salary is $59 K to $72 K plus super. Contact Susanne Hourigan at Katherine on 8973 9716 for more details.

A similar position is expected to be advertised in April to be based in Alice Springs or Tennant Creek.

For vets wishing to work within the livestock industries, the job is very satisfying, personally. I have really enjoyed my 30 or so years in veterinary public health.

There are opportunities for personal development and future promotion opportunities. There is minimal after-hours work.

Staff Changes within Primary Industries

Francois Human, after almost three years as Veterinary Officer in Tennant Creek, has been appointed to the Senior Veterinary Officer Disease Surveillance position located at the Berrimah Veterinary Laboratories. The job coordinates general and active surveillance and manages the NT component of national surveillance programs.

Mauricio Perez-Ruiz has been transferred from the Regional Veterinary Officer Katherine to undertake a new job - Senior Veterinary Officer Product Integrity at Berrimah Farm. Mauricio will continue chemical residues activities which will be combined with meat industries policy work. Mauricio will assist Kevin de Witte in animal welfare policy and procedures and assist me with national animal health policy.

Susanne Hourigan after almost three years as the Veterinary Officer at Katherine has won the Regional Veterinary Officer Katherine job.

Chair of Animal Health Committee

I will be the chair of Animal Health Committee during 2006. The Chair is rotated on an annual basis. Animal Health Committee is the peak national technical committee for animal health and welfare matters principally relating to the livestock industries. Members are the Chief Veterinary Officers of the Commonwealth, States and Territories and the Director of the Australian Animal Health Laboratory at Geelong. 2006 will be a busy year!

I wish you all the best for 2006.

Brian Radunz
Chief Veterinary Officer
8999 2130

Out and about with animal health staff

Katherine has seen some major changes in Departmental staffing. Willie Bradshaw resigned his position and Grant Parker has been appointed as our newest Stock Inspector. Grant joins the Department of Primary Industry, Fisheries and Mines following three years working with Queensland Department of Primary Industry. Mauricio Perez-Ruiz has relocated to Darwin as the Senior Veterinary Officer Product Integrity and Susanne Hourigan will take the Regional Veterinary Officer, Katherine, position.

Mauricio Perez-Ruiz participated as Operations Manager in Exercise Eleusis from 29th November to 1st December 2005 as well as the debrief on the next day. He also attended an Emergency Coordination Centre Management Course in Darwin, from 7th – 11th November 2005, with five other Department of Primary Industry, Fisheries and Mines staff.

Susanne Hourigan attended the Bovine Syndromic Surveillance System (BOSSS) workshop at Sydney University from 13th October 2005. The Berrimah Veterinary Laboratories was happy to welcome Francois Human, previously Regional Veterinary Officer for Tennant Creek, in the position of Senior Veterinary Officer Disease Surveillance. Francois arrived at his new office on 23rd December 2005.

Lorna Melville, Richard Weir and Susan Walsh all attended the second annual Australian Biosecurity CRC for Emerging Infectious Disease (AB-CRC) National Workshop in Perth from 7th – 9th November 2005. Lorna Melville is a knowledge broker on the AB-CRC. Richard Weir presented a paper on the research work he and Susan Walsh are undertaking funded by the AB-CRC. Information on the projects that the AB-CRC are funding can be found at www.abcrc.org.au

Anton Janmaat travelled to Sabah in Malaysia, on an advisory visit, just before Christmas.
News from the Katherine Region October-December 2005

Botulism type C was confirmed as the cause of death of whistling ducks on the sewage ponds at the Tindal RAAF base. This seems to be an annual event with a pelican involved last year! Botulism was also the likely cause of death of 10 cows and two heifers with signs of progressive paresis paralysis and recumbency at a property close to Mataranka. On this same property, a sick cow that originated from Queensland was found to have hydatid disease.

Several stations in the Victoria River District have reported horses exhibiting mucopurulent nasal discharge and weight loss. One animal out of several reported with "walkabout" symptoms died. Some animals in the group returned positive convalescent antibody titres to Equine Herpes Virus Type 1, however, acute titres were not available, confounding interpretation of the results. In the Katherine rural area a private veterinarian reported a horse with clinical signs suggestive of Hendra virus infection. Hendra virus was excluded by sending a sample of nasal discharge to the Australian Animal Health Laboratory for viral antigen detection by polymerase chain reaction. Equine Herpes Virus Type 1 and Type 4 were ruled out by demonstrating a lack of rise between acute and convalescent antibody titres. The horse subsequently recovered.

Mauricio Perez-Ruiz
Regional Veterinary Officer, Katherine
8973 9756

LARVAL BARRAMUNDI PRODUCTION: HEALTH CERTIFICATION AND TESTING

The production of barramundi larvae at the Northern Territory Government’s Darwin Aquaculture Centre (DAC) continues to expand to meet demands for fingerlings for aquaculture farms. This month (January 2006), in excess of 600,000 fingerlings have been produced for subsequent distribution to barramundi farms in the Northern Territory, as well as Queensland, New South Wales, South Australia and Western Australia.

In order to minimise the risk of disseminating infectious diseases in the distributed larvae, both broodstock and larvae are subject to a health management program. On entering DAC, broodstock undergo a quarantine period during which they are treated for external parasites. Subsequently, broodstock are tested for viral nervous necrosis virus (VNNV), also known as nodavirus, in gonadal samples while assessing gonadal maturation. Prior to spawning, selected males and a female fish are confined in 7,000 litre tanks. Fertilised eggs are rinsed in clean running water for a period of five to six hours while in the egg collectors. Eggs are surface-disinfected with ozone prior to transfer to the hatchery. Following hatching, larvae are reared in an environmentally controlled recirculating water system which includes particulate and biological filtration, ultraviolet disinfection, heating/cooling and provision for water exchange. The larval rearing facility is maintained in strict quarantine with access by authorised staff only and decontamination of personnel on entry and exit. Larvae are reared on a batch-by-batch basis and following transfer of larvae to the nursery the entire system is subject to ozone decontamination prior to entry of new batches of larvae.

Larvae are subject to a health monitoring and testing program based on daily observations of general health and growth rate, together with a laboratory testing schedule for VNNV, Streptococcus iniae and parasitism between hatching and 21 days of age. The health of fish continues to be monitored following transfer to the nursery with any disease or mortalities investigated.

This partnership between DAC and Berrimah Veterinary Laboratories provides fish farmers with a high level of assurance that seed-stock entering their farms do not carry VNNV or S. iniae, two major limiting factors to barramundi production in Australia.

John Humphrey
Manager Aquatic Animal Health
8999 2354

Jerome Bismans
Senior Aquaculture Scientist
8924 4258

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