OIE Collaborating Centre for Diagnosis and Control of Animal Diseases and Related Veterinary Product Assessment in Asia

National Veterinary Assay Laboratory

http://www.maff.go.jp/nval/english/

National Institute of Animal Health

http://niah.naro.affrc.go.jp/index.html
Title: Animal Diseases Breaking Out in the Asian Region

Counter-measures: Delivering the technology and information, including the testing/inspecting techniques and research studies, that have been developed to date

- Direct contribution by
  → Providing the technology for testing/inspecting and research studies of veterinary medicinal products

- Indirect contribution by
  → Supplying medicinal products that are key materials for controlling animal diseases

Results:
(1) Eradication of animal diseases in the Asian region
(2) Improving productivity in the livestock industry in the Asian region
As an OIE collaborating center (OIE-CC), the laboratory is tasked with the following:

Providing technical support, etc., in specific professional fields (veterinary medicinal products, emerging infectious diseases, etc.)

The National Veterinary Assay Laboratory owns the following:

1. Information/technology for testing/inspecting National vaccine stockpiling program (FMD, CSF, HPAI, Rinderpest), Introduction of seed lot system
2. Information/technology concerning research studies Japanese Veterinary Antimicrobial Resistance Monitoring System, Method for detecting extraneous agents
3. Technology concerning veterinary drugs administration Examination for Approval Applications, Selection of strains for AI vaccine production, Establishment of the Standards of Use for Veterinary Drugs (withdrawal periods)

The National Veterinary Assay Laboratory is expected to fulfill the following roles.

1. Taking the initiative in activities such as studies in the field of veterinary medicinal products and dissemination of the related technology
2. Providing scientific technology for OIE member states
3. Improving the quality of veterinary medicinal products and enhancing the capacity of their development in Asia
4. Organizing global conferences on behalf of OIE
5. Disseminating the results of VICH programs (including related guidelines) being promoted under OIE's supervision
6. Coordinating scientific and technological studies in collaboration with other research institutes
Official Letter from OIE
To Japanese CVO

National Institute of Animal Health (NIAH)
Dr. Takafumi Hamaoka,
Director General, NIAH

National Veterinary Assay Laboratory (NVAL)
Dr. Masato Sakai
Director General, NVAL

Contact Point
Kenichi Sakamoto
Research Manager (Exotic Disease)
skenichi@affrc.go.jp

Our Ref.: KM/SL 35.861 1 June 2010

Dr Toshiro Kawashima
Director
Animal Health Division
Food Safety and Consumer Affairs Bureau
Ministry of Agriculture, Forestry and Fisheries
1-2-1 Kasumigaseki
Chiyoda-ku
Tokyo 100-8950
JAPAN

Dear Dr Kawashima

Application for designation of an OIE Collaborating Centre for Diagnosis and Control of Animal Diseases and Related Veterinary Product Assessment in Asia

I am pleased to advise you that during its recent annual General Session in Paris, the World Assembly of Delegates of the OIE confirmed the designation of the National Institute of Animal Health (NIAH), Ibaraki, and the National Veterinary Assay Laboratory (NVAL), Tokyo, as a new OIE Collaborating Centre for Diagnosis and Control of Animal Diseases and Related Veterinary Product Assessment in Asia with Dr Kenichi Sakamoto as the contact point.

Thank you for your willingness to co-operate with the OIE and its Members, and I look forward to working with Dr Sakamoto in the future.

With best regards,

Yours sincerely

Kenichi Sakamoto
Research Manager (Exotic Disease)

Dr Bernard Vallat
Director General
Structure of Animal Disease Control System in Japan

- Animal Quarantine Service
- National Institute of Animal Health
- Prefectural governments
- Livestock Hygiene Service Centers
- Livestock Farmers
- Ministry of Health, Labor and Welfare
- Expert Panels
- National Veterinary Assay Laboratory
- Private Veterinarians

- OIE

2,193 veterinarians

Ca 3,500 veterinarians

Numbers as of 2006
The NIAH, the only centre for research and investigation of animal health in Japan, has promoted the prevention of animal diseases – not only in Japan but also in neighbouring Asian countries – by conducting basic research on animal diseases in relation to animal health and public health, as well as wide-ranging applied research covering diagnosis, prevention and treatment, focusing on animal infectious diseases associated with pathogens such as viruses, bacteria, parasites and prions.

The NIAH has a track record of contributing to the prevention and control of a number of diseases listed by the OIE. In Japan, NIAH has demonstrated success in the eradication of many prioritised transboundary diseases such as rinderpest, foot-and-mouth disease (FMD), HPAI, classical swine fever, equine infectious anaemia, bovine brucellosis and the control of arbovirus infections such as Akabane disease and Japanese encephalitis, which are characteristic of the Asian monsoon area.
Veterinary biological products and antibiotics are essential tools to comprehensive control of those animal diseases. The NVAL has been engaged in the national assay and pharmacovigilance of veterinary products since its establishment in 1948, and has played a substantial role in the field of evaluation of veterinary products. The NVAL ensures the quality, efficacy and safety of these products at each stage of development, manufacturing (importing), marketing, retailing and usage. The NVAL is playing an important part in VICH activities as a member of the MAFF. Japan is the only VICH member country in Asia.
International contribution of NIAH & NVAL

As the national human and training resource organisation for diagnosis and control of animal diseases and related veterinary products assessment, the NIAH and the NVAL have been hosting many foreign government technical officers or dispatching their staff as experts to foreign countries with support from MAFF and another related government organisation, the Japan International Cooperation Agency (JICA).

Figure 1. The countries of participants accepted and experts dispatched from NIAH and NVAL in recent years.
Our areas of expertise for diagnosis and control of diseases and veterinary products

1. Vesicular diseases
2. Animal influenza
3. Vector-borne diseases
4. Other viral infectious diseases such as PRRS
5. Assessment of related veterinary products
Details of activities and services in this new Collaborating Centre

- Outbreak investigation and epidemiological studies
- Development, improvement and evaluation of diagnostic tests
- Surveillance and control of animal diseases
- Quality control of veterinary products
- Monitoring of antibiotic resistant bacteria
- Contribution to international animal hygiene activities by OIE and other international organizations
- Cooperative studies with other organizations
- Convening of international scientific meetings and workshops
- Hosting of researchers and technicians from foreign countries
1. Vesicular diseases

Dr. Kenichi Sakamoto
Research Manager
FMD and other vesicular diseases expert
OIE Scientific Commission for Animal Diseases
  Vise President 2003-2006
  Member 2006-2009
  Secretary-General 2009-present

200,000 doses of FMD Monovalent O1 Manisa Vaccine

The vaccine will be provided to Myanmar.
Vaccination Program for 200,000 doses of FMD Monovalent "O" type Vaccine which will be provided from National Institute of Animal Health (NIAH), Japan in 2010

Introduction

In Myanmar, FMD occurs every year. Regular outbreaks of FMD cause great economic losses in the agriculture and livestock sectors. In Myanmar, FMD control zones are establishing as follows:

- Malaysia-Thailand-Myanmar zone (MTM) — Tanintharyi Division
- Upper Mekong zone — Eastern Shan State
- Central Myanmar zone — Sagaing, Mandalay and Magway Divisions

The Central Myanmar zone; Sagaing, Mandalay and Magway divisions are the source of FMD outbreaks for the country because of the high population density of cattle and buffaloes and only outward movement of animals from the division. According to the serosurveillance study, these area need to be controlled by vaccination. Therefore the FMD vaccines which will be provided by NIAH, Japan are to be used in the Central Myanmar zone.

Objectives

- To prevent FMD in the Lewe township of Mandalay Division or Magway township of Magway Division
- To reduce the infection in the areas
- To develop the economy of farmers and livestock breeders

Strategy of Vaccination Program

- Site of Project

In Magway Division, Magway township was infected in 2009 and Magway Division is infected area for many years before. Yenanchaung, Taungtwingyi, Myothit and Minbu townships are border areas of Magway township.

In Mandalay Division, Livestock Industry zones were established in Naypyitaw District. Lewe township is under the Naypyitaw district and it was infected in 2009.

- Utilization of Vaccines

The vaccines will be kept at +4°C Cold Room in FMD Laboratory and distributed by vaccination program.
Re-Start of FMD Vaccination Program in Central Myanmar Under activity of OIE Collaborating Centre

• Japan will provide the new lot of FMD vaccine.
• 200,000 doses
• O1 Manisa
• Vaccine will be ready to provide from April 2011 to Myanmar
• NIAH is going to propose its scientific support for FMD vaccine immunology under OIE laboratory twinning with FMD Laboratory in Myanmar.
Establishing the Hub laboratory in Veterinary Microbiology in the Southeastern Asia

• Research and diagnosis at source of emerging zoonotic/veterinary pathogens

• Main topics in past 5 years are
  • Highly Pathogenic Avian Influenza virus (HPAIV)
  • Swine Influenza Virus (SIV)

• Collaboration partners outside of Thailand are
  
  • Myanmar, Livestock Breeding and Veterinary Department, Ministry of Livestock and Fisheries
    • HPAIV in Myanmar
    • Training for diagnosis at Yangon Laboratory
    • Pathogenecity studies of Myanmar HPAI isolates at NIAH, Tsukuba

  • Vietnam, Department of Animal Health, Department of Agriculture and Rural Development
    • SIV surveillance in the Northern and Southern Vietnam
    • Training for virus isolation at Hanoi, HCM labs
Vector-borne animal diseases

**Flaviviridae (genus Flavivirus)**
- Japanese encephalitis virus
  - Encephalitis in humans & Abortions in pigs

**Bunyaviridae (genus Orthobunyavirus)**
- Akabane virus
- Aino virus
- Abortion, stillbirth, premature birth, congenital abnormalities in cattle

**Reoviridae (genus Orbivirus)**
- Chuzan virus
- Bluetongue virus
- Ibaraki virus
- Bluetongue
- Bluetongue-like disease of cattle

**Rhabdoviridae (genus Ephemerovirus)**
- Bovine ephemeral fever virus
  - Bovine ephemeral fever

**NIAH has developed**

**Diagnostic methods** for detection of viral genes (Multiplex RT-PCR), antigens (Immunobinding assay using Monoclonal antibodies) and antibodies (Akabane competitive ELISA)

Attenuated and inactivated **vaccines** (except for BT)

Dr. Makoto Yamakawa
Arbovirus expert at Kyushu Station
Arbovirus surveillance for more than 20 years in Japan has demonstrated that Bovine arboviruses are introduced repeatedly from tropical and subtropical zones in Asia by infected vectors carried on the seasonal winds over long distances.

Collaborative research on Arboviruses with Korea, Taiwan & China has started.

A broader network in Asia to share information of distribution of arboviruses (includes unknown viruses) by virus surveillance, to apply the established diagnosis and prevention methods in each country as well as to develop new technical skills has to be established through activities as the OIE collaborating centre.

International Workshop on Arboviral Diseases of Livestock in East Asia on March 17-18, 2009
Porcine reproductive and respiratory syndrome (PRRS)

Hiroshi Tsunemitsu, DVM, PhD
Michihiro Takagi, DVM, PhD

Research Team for Viral Diseases
National Institute of Animal Health
Tsukuba, Japan
History of Highly Pathogenic PRRS in China

- A highly pathogenic pig disease emerged in China in 2006, which was characterized by fever, red discoloration of the body and blue ears associated with high mortality.

- Due to the unknown causative agent, the outbreak was called as ‘Pig high fever disease: PHFD’.

- By the beginning of 2007, the epidemic spread throughout all of China.

In a short time after the outbreak of high virulent PRRS, China developed an inactivated vaccine using the isolated virus. However, the vaccine couldn't provide effective clinical immune protection as expected.

(From APVS2009 by Dr. H Yang)
Outbreaks of HP-PRRS in the world

Report: Vietnam, Philippines, Laos, Cambodia
No official report: Thailand, Indonesia

Data source: DAH, Vietnam
In Asia, NIAH & NVAL will start our new activity as a new collaborating centre

**OIE Collaborating Centre for Diagnosis and Control of Animal Diseases and Related Veterinary Product Assessment in Asia**

- To play a role of centre of expertise for prevention and control of animal diseases, and therefore, share our scientific knowledge and skills with our partner veterinary science laboratories.
- To establish closer partnership with you through our collaborating activity and transfer the indispensible partnership to the next generation due to the necessity of continuous collaborative effort for the world-wide control of animal diseases.

**One Asia, One Health**

**One World, One Health**