



# WELCOME

Delegates from  
Animal Health Research Institute, Council of  
Agriculture, Executive Yuan  
And  
Bureau of Quality Control of Livestock  
Products

REGIONAL REFERENCE LABORATORY FOR FMD IN SOUTH EAST ASIA  
DEPARTMENT OF LIVESTOCK DEVELOPMENT  
PAKCHONG, NAKHONRATCHASIMA, THAILAND

## HISTORY

The Foot and Mouth Disease (FMD) Laboratory in Pakchong was first established in 1958, since then the laboratory served as the National FMD Laboratory in Thailand. Upon the recommendation of the OIE Sub-Commission for FMD Control in South East Asia to develop the laboratory as SEAFMD Reference Laboratory.



# HISTORY

In 1996, the DLD provided the budget for establishing the BSL-3 laboratory aimed to be able to handle the exotic virus in the region.



# HISTORY

The laboratory has officially opened on October, 11<sup>th</sup>. 2004, since then RRL has received the samples from SEAFMD member countries. The RRL has designated as the OIE Reference Laboratory for FMD since October 2008.



# HISTORY

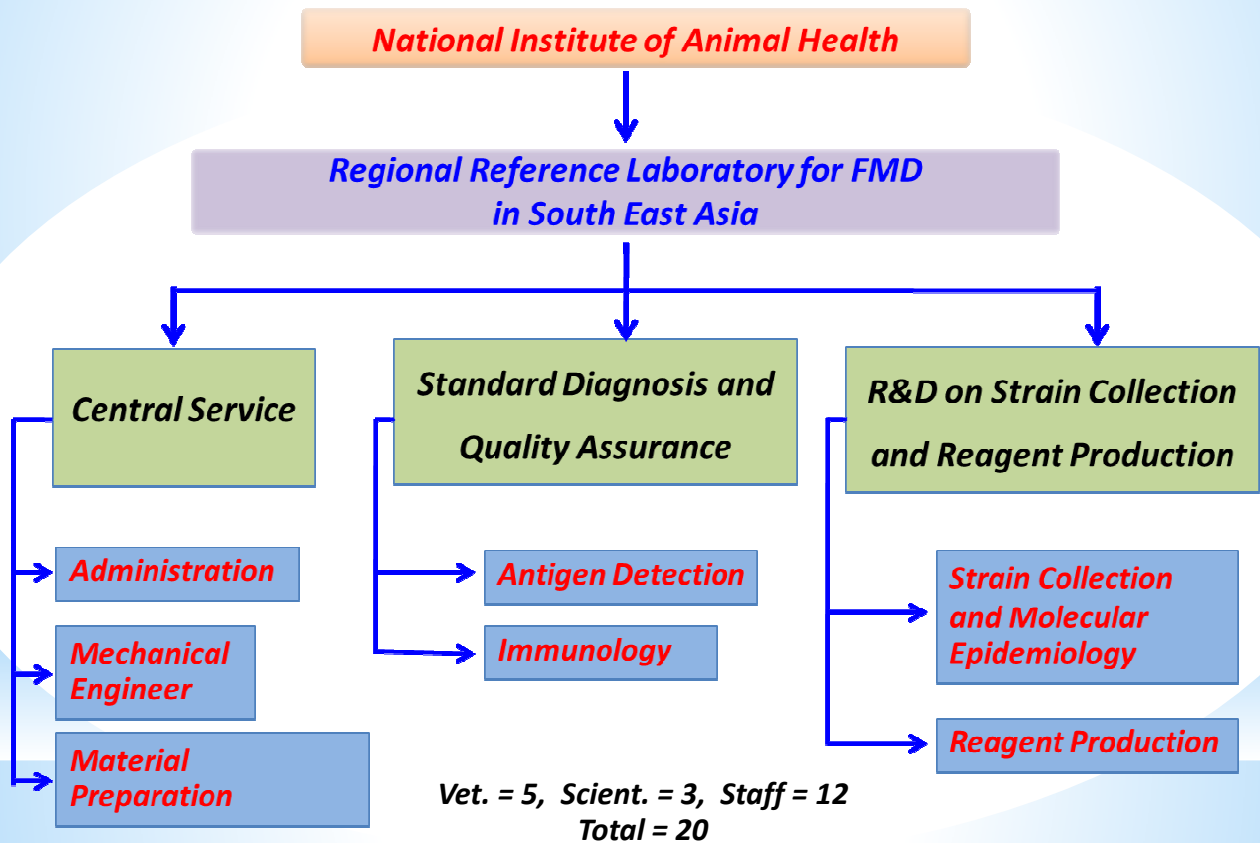
In 2007, RRL has accredited by ISO/IEC 17025:2005 from Accreditation Body in Thailand , Bureau of Laboratory Quality Standard, Dept. of Medical Science



## RRL VISION

*“ To be the leader in technology for Foot and Mouth Disease diagnosis and the reference center for strain collection and reagent production in South East Asia ”*

# Organization chart



## Mission

### MISSION

To serve as the OIE Reference Laboratory for FMD to OIE member countries

To serve as the central or national lab for FMD diagnosis within Thailand (NIAH and 8 Veterinary Research and Development Center)

FMD Diagnosis by ELISA typing, Virus isolation, LP ELISA, NS test and PCR

Strain differentiation for seed vaccine selection and vaccine matching (r-value) and molecular epidemiology by nucleotide sequencing

Production of diagnostic reagent for FMD diagnosis

# Mission

## MISSION

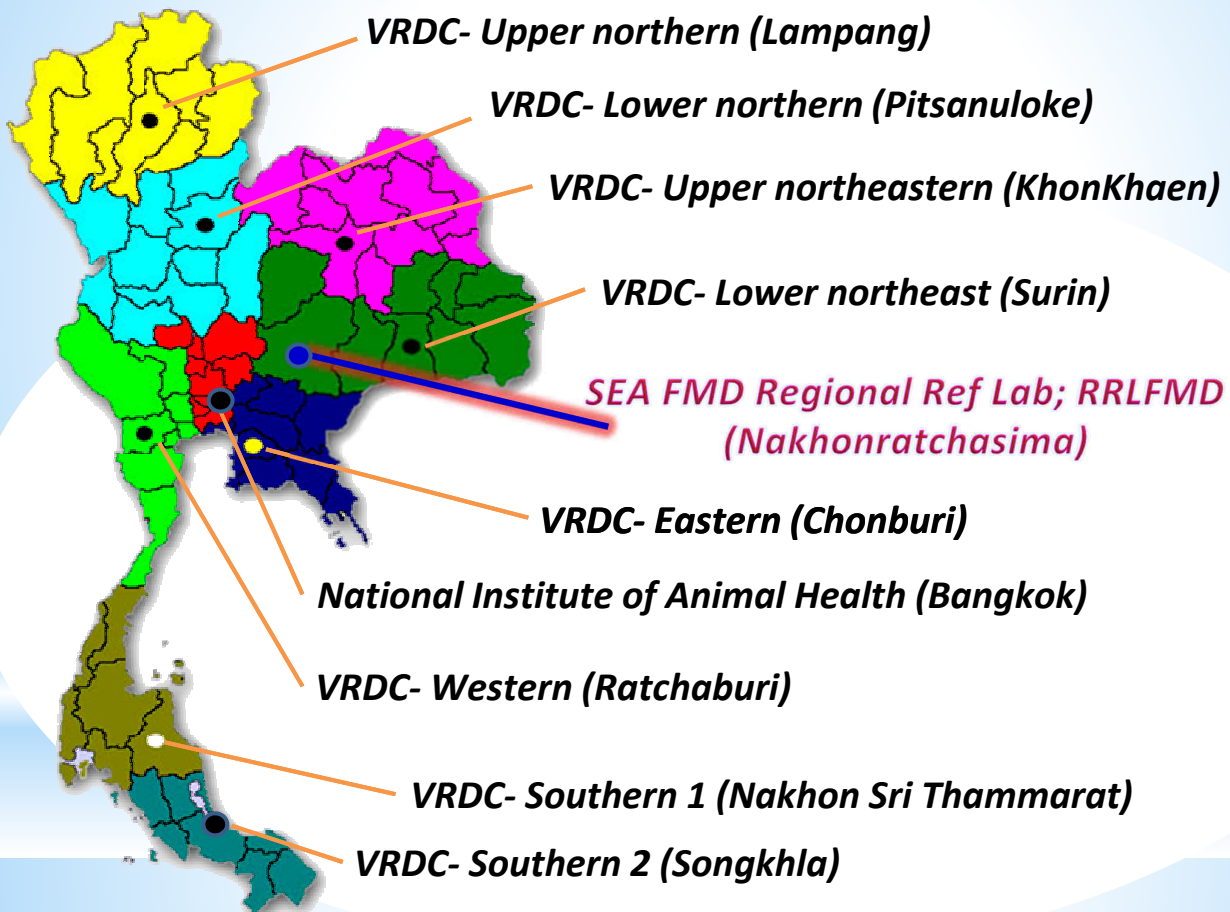
*Training center and technology transfer  
in the region*

*Establishment Quality Assurance Control  
system in the region*

*Provide the inter-laboratory comparison for  
FMD laboratories within the country and  
ASEAN member countries*

*Collaborative research work among the  
institutes and international organizations:  
OIE, WRL, FAO, AAHL and JICA*

## FMD Laboratory network activities



**VRDC = Veterinary Research and Development Center**

## Regional level

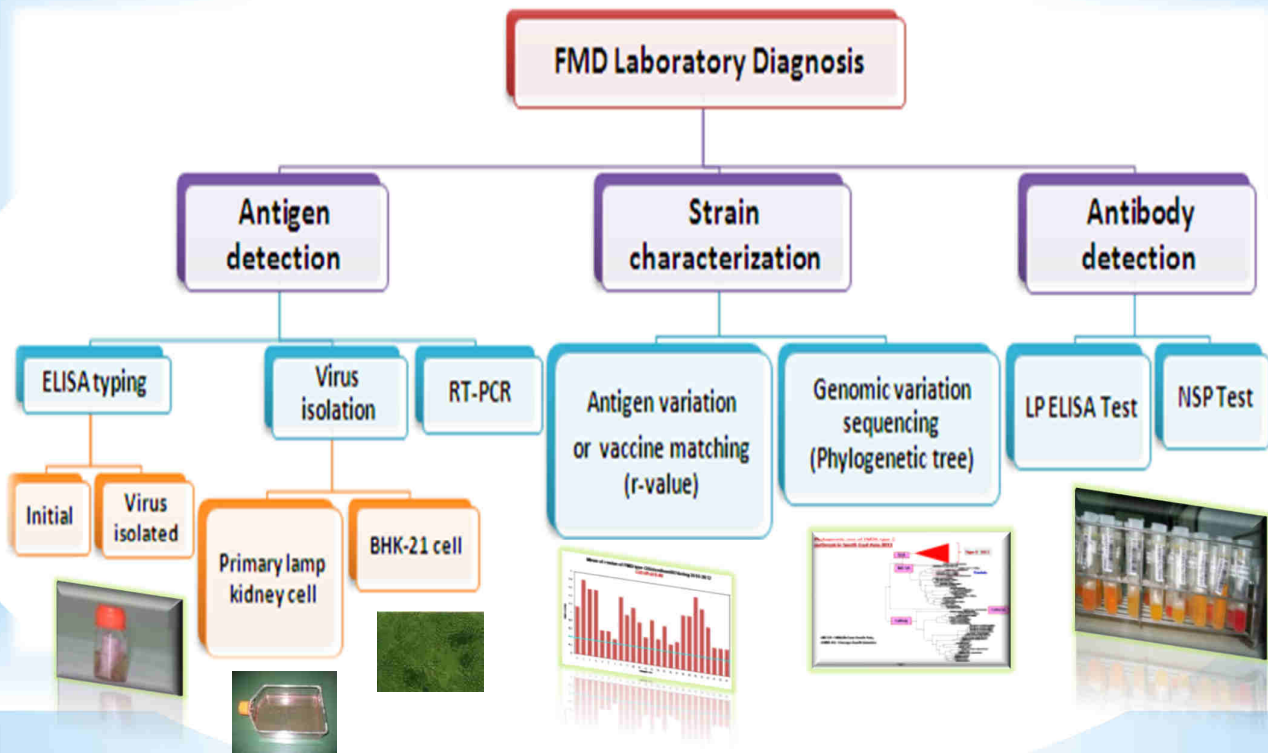


## Global level



# RRL ACTIVITIES

## 1. Laboratory Diagnosis



# RRL ACTIVITIES (Cont.)

## 2. Quality Assurance Program



**International Quality Standard**

RRL has accredited by ISO /IEC 17025:2005 from Accreditation Body in Thailand , Bureau of Laboratory Quality Standard, Dept. of Medical Science



**Accreditation scopes:**

- Antigen typing test by ELISA technique
- Antibody measurement by LP ELISA
- 3ABC Non structural protein (NSP) test

## ***2. Quality Assurance Program (Cont.)***

**Inter laboratory comparison round 5/2017**

**Participating lab: 17 labs**

- 7 FMD laboratories within Thailand.
- 10 SEAFMD laboratories; Cambodia, Lao PDR, Philippines, Malaysia, Brunei, Myanmar, Vietnam\_ Hanoi, Vietnam\_ Ho Chi Minh, Singapore, Thailand(RRL)



## ***RRL ACTIVITIES (Cont.)***

### ***3. Reagents supply for FMD diagnosis***

- Rabbit trapping antibody for FMDV, type O, A and Asia1
- Guinea pig detecting antibody for FMDV type O, A and Asia1
- Concentrated Inactivated FMD antigen
- Control serum : strong and weak positive serum, negative serum





**Number of FMDV diagnostic reagents and reference materials from RRL FMD supplied for nationally and OIE member countries in 2015-2017**

<i>Type of reagents</i>	<i>Supplied nationally and own lab</i>	<i>Supplied OIE members countries</i>	<i>Total</i>	<i>Remarks</i>
Rabbit trapping antibody for type O, A and Asia1	Type O = 92 sets Type A = 93 sets Type Asia1 = 65 sets	Type O = 6 sets Type A = 8 sets Type Asia1 = 3 sets <b>(Laos, Myanmar, Cambodia, Vietnam)</b>	Type O = 98 sets Type A = 101 sets Type Asia1 = 68 sets	1 set can be tested for 500 samples
Guinea pig detecting antibody for type O, A and Asia1	Type O = 85 sets Type A = 99 sets Type Asia1 = 68 sets	Type O = 6 sets Type A = 9 sets Type Asia1 = 3 sets	Type O = 91 sets Type A = 108 sets Type Asia1 = 71 sets	1 set can be tested for 500 samples
Concentrated inactivated (50X) antigen type O, A and Asia1	Type O = 281 ml Type A = 202 ml Type Asia1 = 193 ml	Type O = 14 ml Type A = 26 ml Type Asia1 = 7 ml	Type O = 259 ml Type A = 228 ml Type Asia1 = 200 ml	
Control serum for C++, C+ and C-	C++ = 662 ml C+ = 612 ml C- = 620 ml	C++ = 53 ml C+ = 53 ml C- = 53 ml	C++ = 715 ml C+ = 665 ml C- = 673 ml	

## ***RRL ACTIVITIES (Cont.)***

### ***4. Research activities during 2016-2017***

- Development of Enzyme-linked immunoelectrotransfer blot assay (ELITB) for confirmation of NSPs test for foot and Mouth disease diagnosis
- Development of molecular serotyping of foot and mouth disease virus by real time RT-PCR
- Increase Potential of FMDV Detection by one-step multiplex RT-PCR.
- Vaccine matching and genetic characterization of FMDV serotype O and A isolates in South East Asia.

# RRL ACTIVITIES (Cont.)

## 5. FMD training center and technique transfer in the region

FMD antigen detection training course during 4-8 July 2016  
Participant from 9 Veterinary Research and Development  
Centers (VRDC) within Thailand and National Institute of  
Animal Health



# RRL ACTIVITIES (Cont.)

Dr. Sandar Lwin, Myanmar; Laboratory Training for FMD Diagnostics  
Capacity during 24<sup>th</sup> October 2016 - 13<sup>rd</sup> January 2017, under IAEA  
support



Trainee from Vietnam: training on FMD diagnosis and  
vaccine matching during 22<sup>th</sup> May to 2 June 2017



# RRL ACTIVITIES (Cont.)

Dr. Valerie Mioulet , Head of Virology Section, WRLFMD Institute, UK. visit RRL for investigation of testing Cambodia samples, 27 June –1 ist July 2016, OIE support.



AAHL, Australia : Dr. Singanallur Nagendrakumar, Research collaborative work on vaccine matching. 29<sup>th</sup> July-11 August 2016



# Thank You!

