



World Organisation
for Animal Health
Founded in 1924



Updates Activity

Regional Reference Laboratory for FMD in South East Asia (Pakchong) THAILAND

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Acting Director of Regional Reference Laboratory for FMD in
South East Asia (RRLFMD)

Progress of RRLFMD-Pakchong Activity

Main Activity

- FMD Diagnosis; 2024/ Serotype O/Ind2001
- Reagent Preparation; Rb, GP, Inac. Ag, Mab



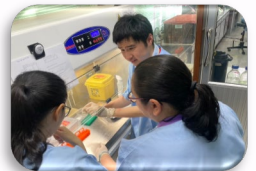
Improvement Activity

- Human Resources; Training, KM, ..
- Building Facility: DTRA; MORU
- Quality Assurance system:
 - ISO 17025:2017 maintain and Expanding new one
 - ISO 17043 (On going)



Collaboration

- Research collaboration
 - ACDP, AUSTRALIA
 - SATREPS, JICA, JAPAN
 - KODIARA Lab; NIAH, JAPAN
 - University
- Technical support
 - WOH
 - WRL; UK
 - ACDP, AUSTRALIA
 - IAEA
 - Other..



Main Activity: FMD Diagnosis

Suspected FMDV Diagnosis



Antibody Detection

1) LP ELISA Test*

Quantitative

Ab titer

Post vaccination

2) NSP test *

Qualitative

DIVA

Animal Movement

1) Molecular

Real-Time RT PCR*

Multiplex RT-PCR

qPCR

2) ELISA typing*

In house reagent; O, A, As1

Exotic reagent: O1, O3039, SAT1, SAT2, SAT3, SVDV

Antigen Detection

3) Virus Isolation

Primary Lamb Kidney cell

BHK21

ZZR

LFBK (On going)

4) Strain Characterization

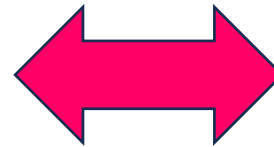
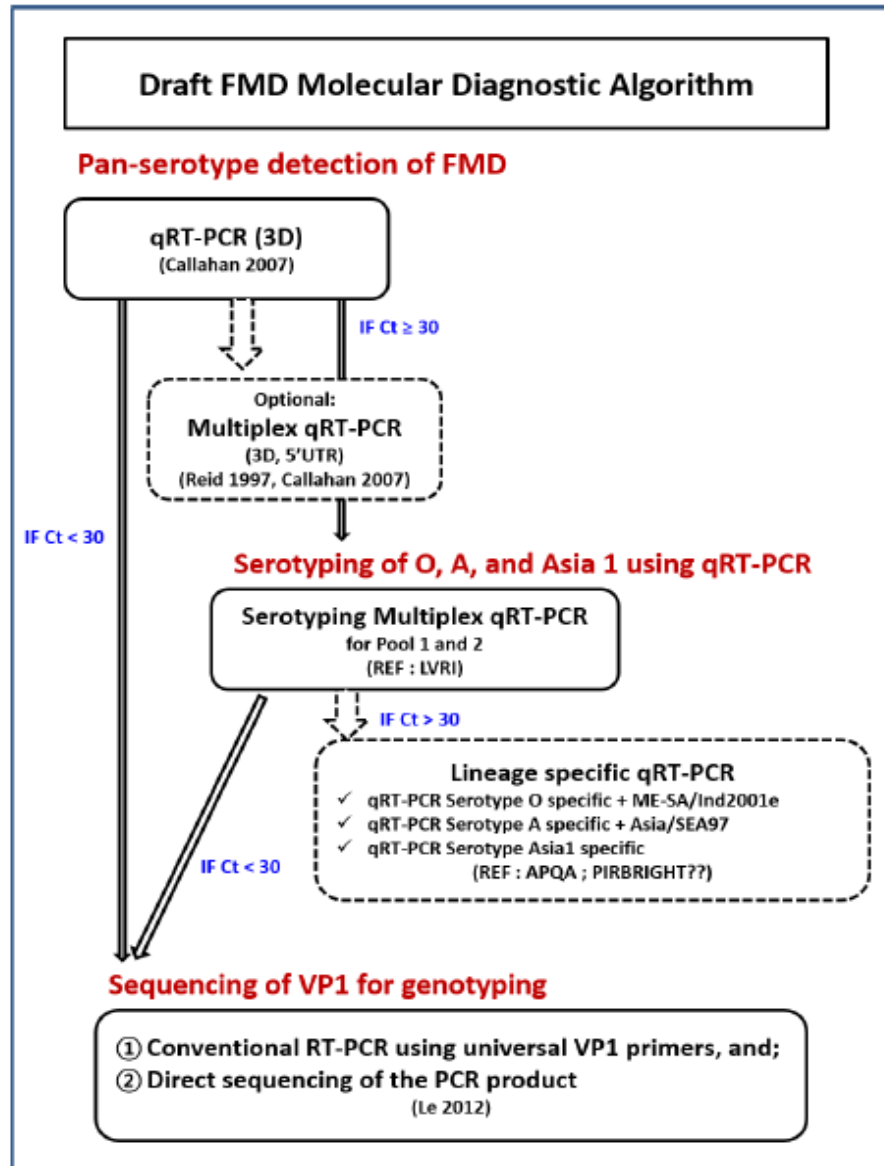
Sequencing

Antigenic variation: Vaccine matching (r-value); ELISA/VNT

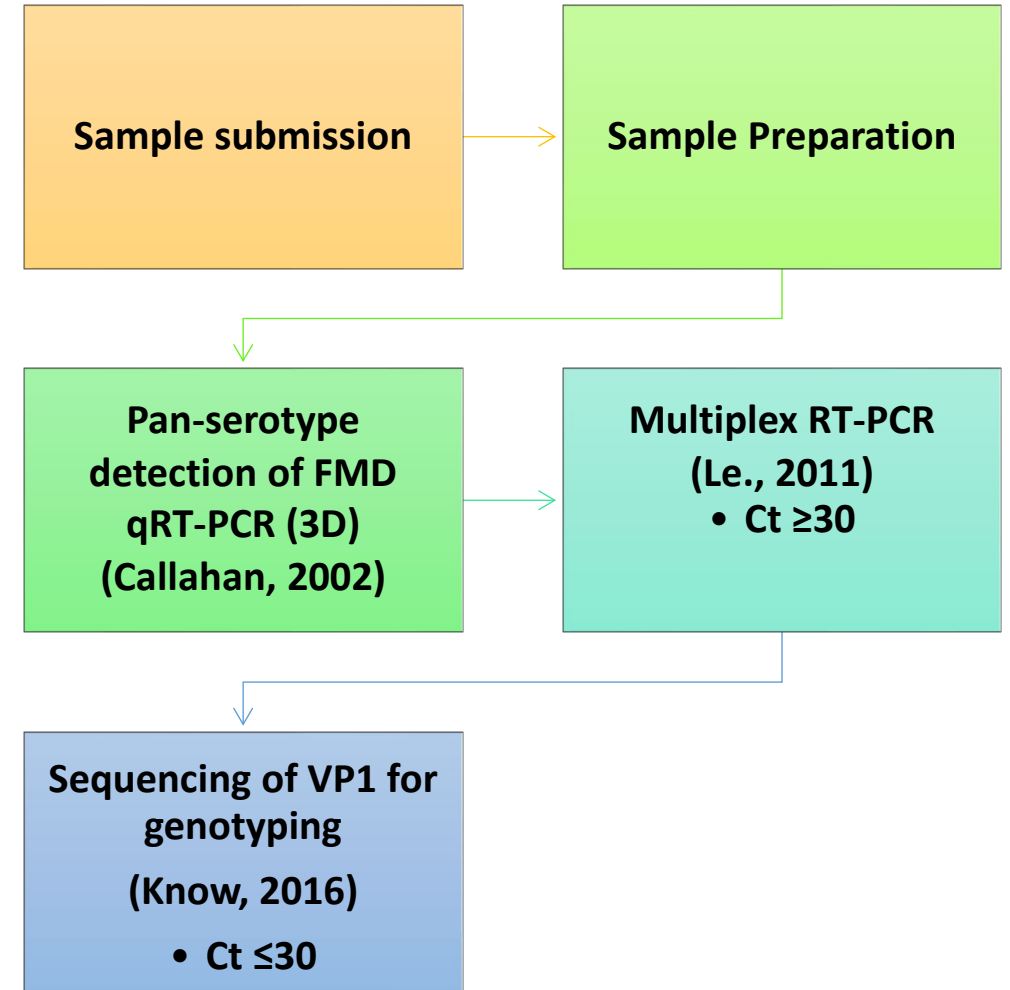


Main Activity: FMD Diagnosis (Cont.)

Annex 1. Draft MFDV Molecular Diagnostic Algorithm

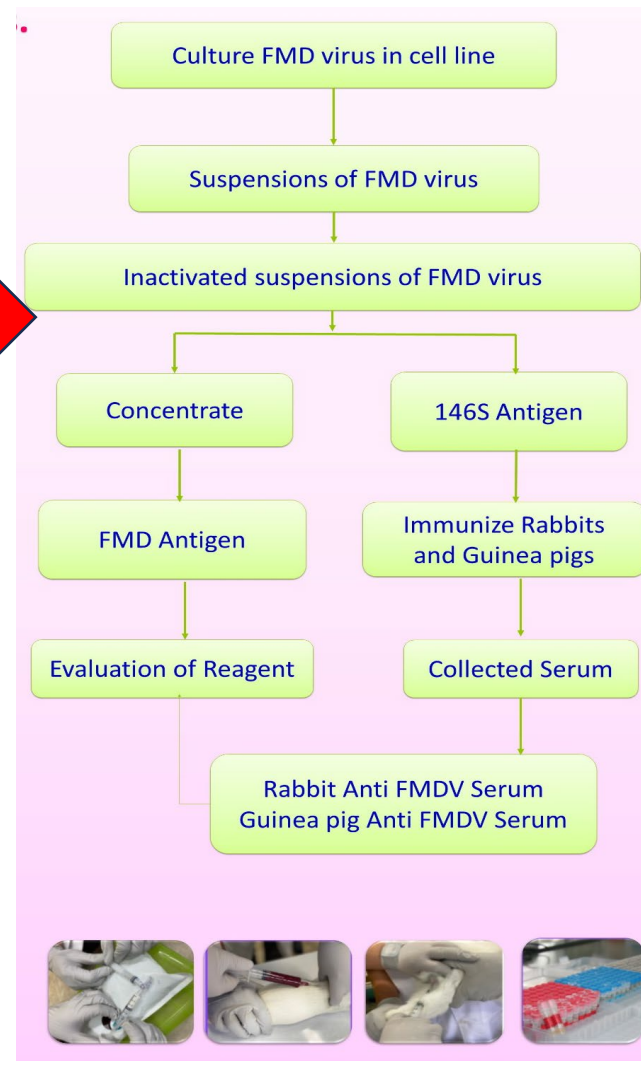
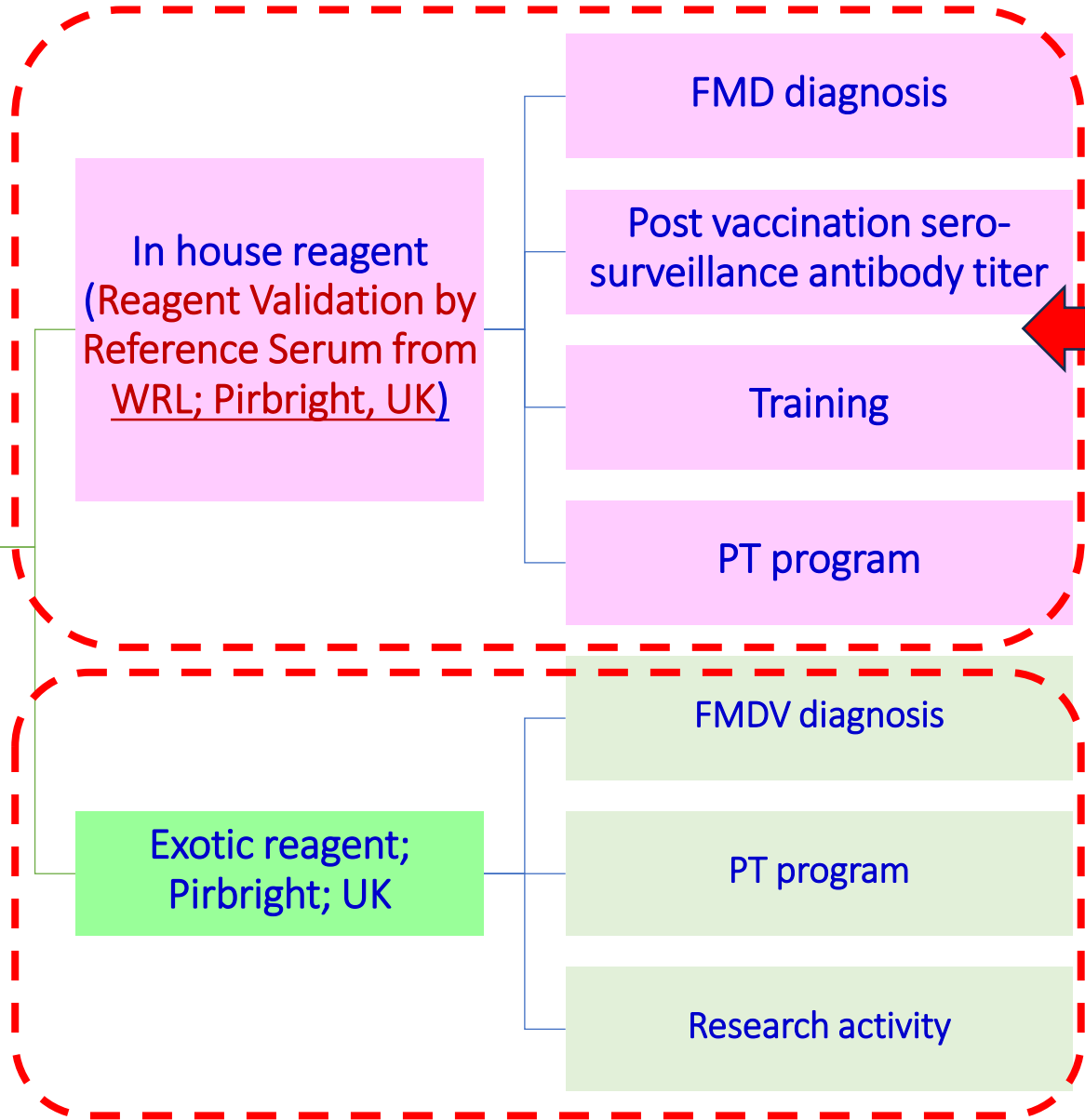


RRLFMD-Pakchong



Main Activity: Reagent preparation

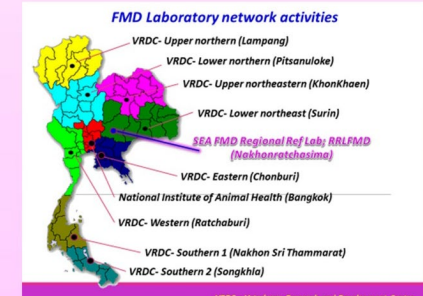
FMD Reagents



Reagents for FMD diagnosis

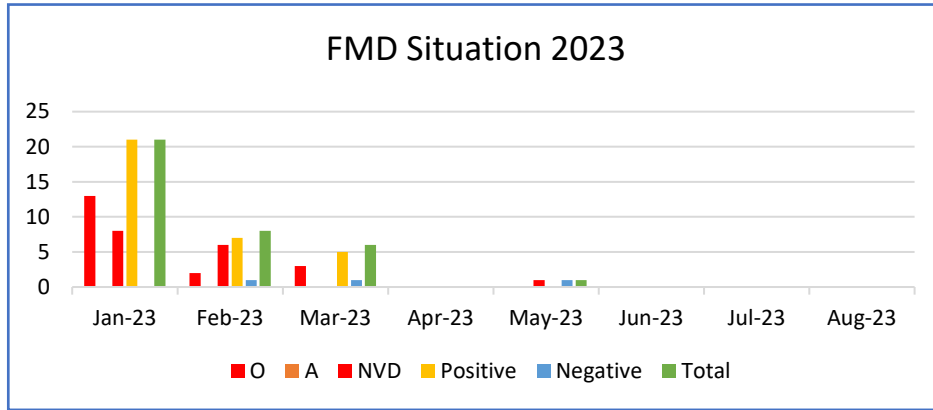
- Rabbit trapping antibody for FMDV serotype O, A and Asia1
- Guinea pig detecting antibody for FMDV serotype O, A and Asia1
- Concentrate Inactivated FMD antigen serotype O, A and Asia1
- Control serum : Strong and Weak positive serum, Negative serum

Supplied Reagents to laboratories

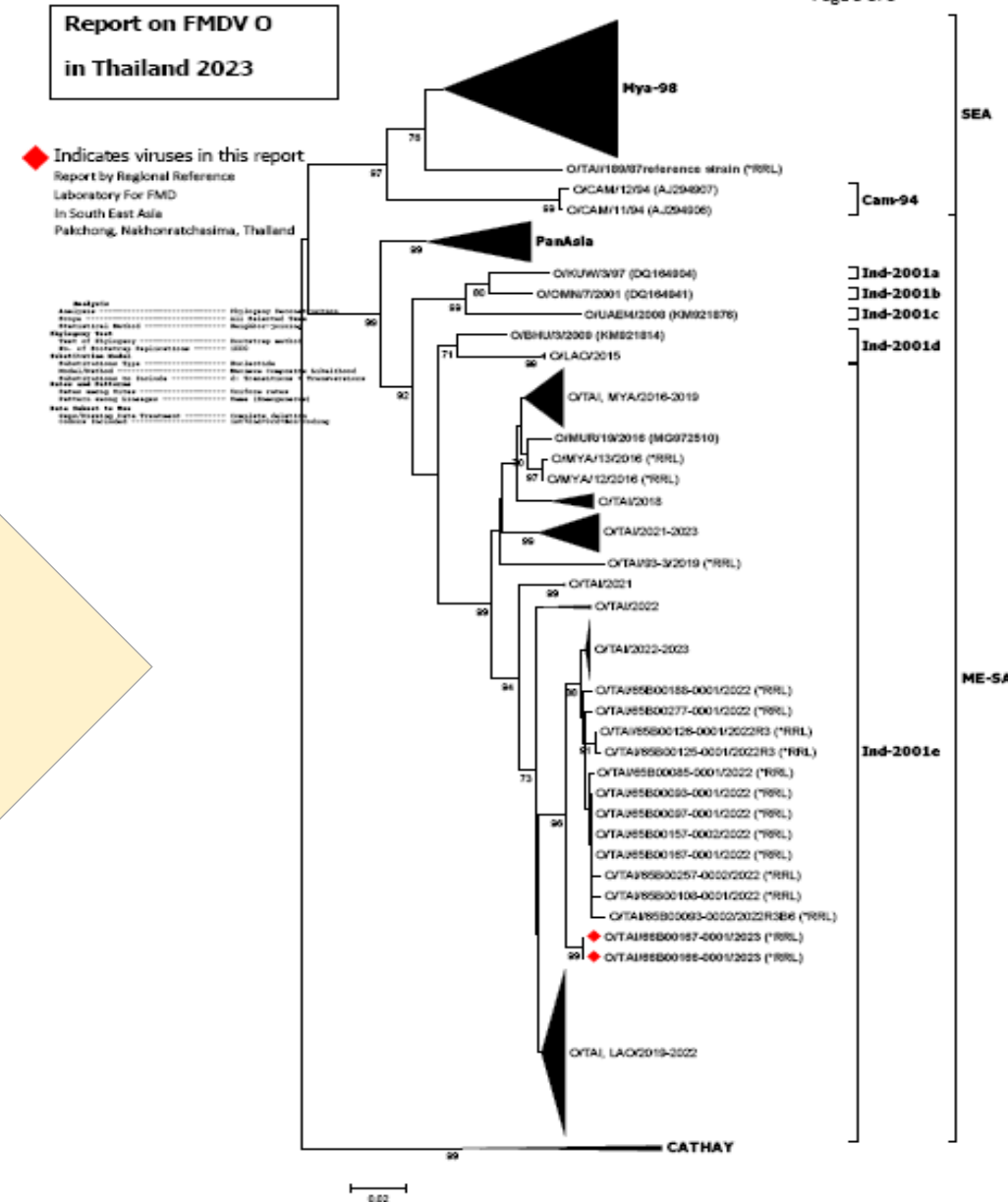
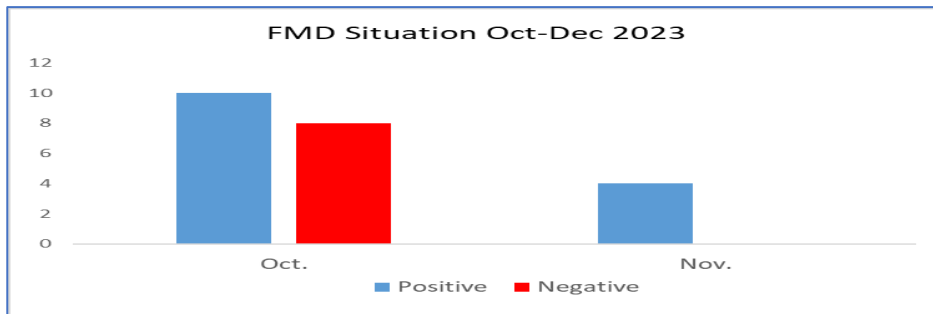


FMD situation in 2023 - 2024

❖ Phylogenetic Tree: 2023

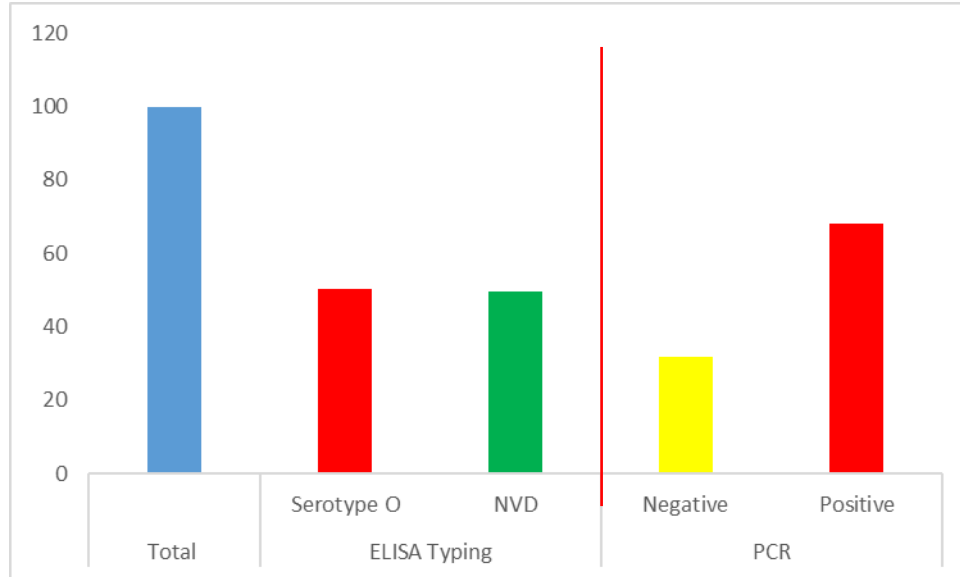


- Strain: O/Ind-2001e
- Topotype: ME-SA

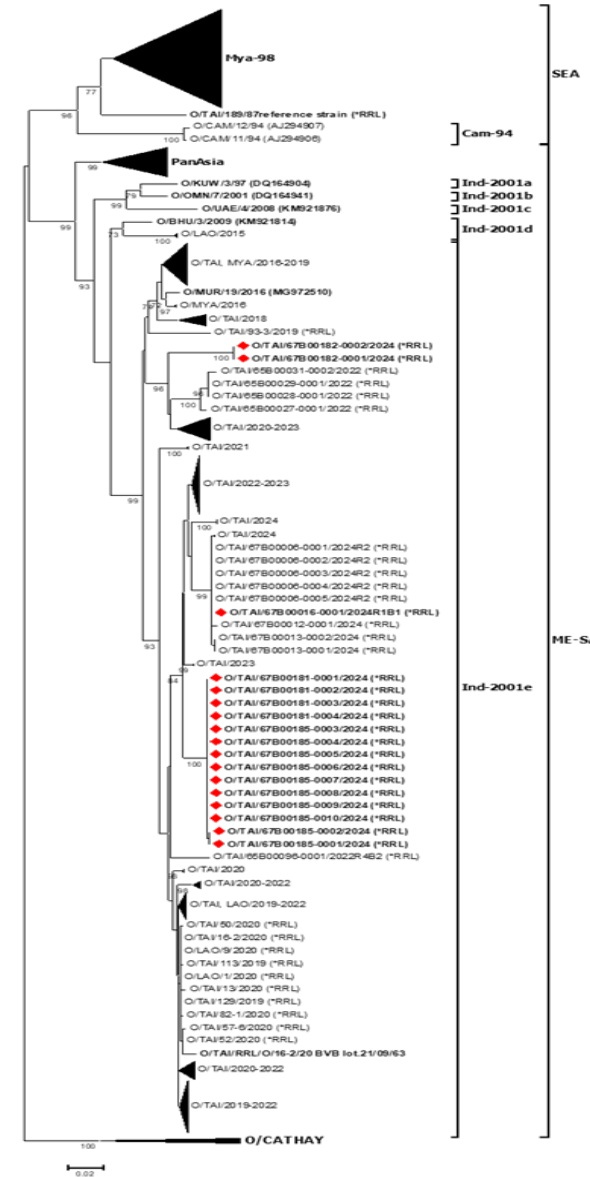


FMD situation in 2023 - 2024

❖ Phylogenetic Tree: 2024



- Strain: O/Ind-2001e
- Topotype: ME-SA



Improvement Activity



Human Resources



Building Facility



Quality Assurance system

Improvement Activity: Human Resources



Regularly Training

- ✓ Online and Onsite
- ✓ Workshop
- ✓ Master and PhD Study

Support activity

- ✓ FMDV Diagnosis
- ✓ Workshop
- ✓ Training
- ✓ Refresh training

Evaluation activity

- ✓ Experts Team(Pirbright; UK /ACDP; AUS)/WOAH-SRR
- ✓ PVS Activity



Improvement Activity: **Building Facility**



Training Building Center;
Start Working



BSL3 facility: Renovating by
DTRA and MORU



Follow up & Evaluation by
Experts and Biosafety Team



New BSL3 Will be Finish on
May 2025



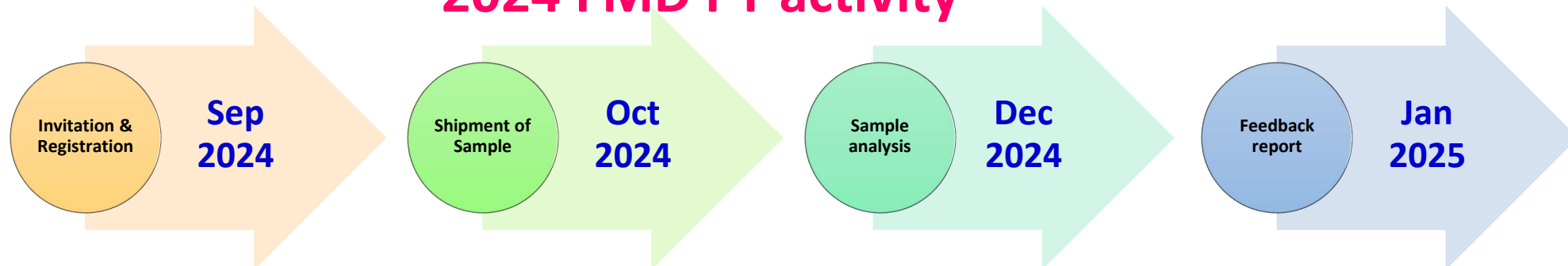
Improvement Activity: Quality Assurance system

Proficiency testing (PT)

- Participating PT Program organized by WRL; UK
 - Support by FAO/WOAH/WRL
- PT Provider
 - LP ELISA, NSP, ELISA Typing (Inac.), and Real Time PCR (Inac.)
 - National laboratory
 - Member laboratory country
 - Support by WOAH SRR



2024 FMD PT activity



Improvement Activity: Quality Assurance system (Cont.)

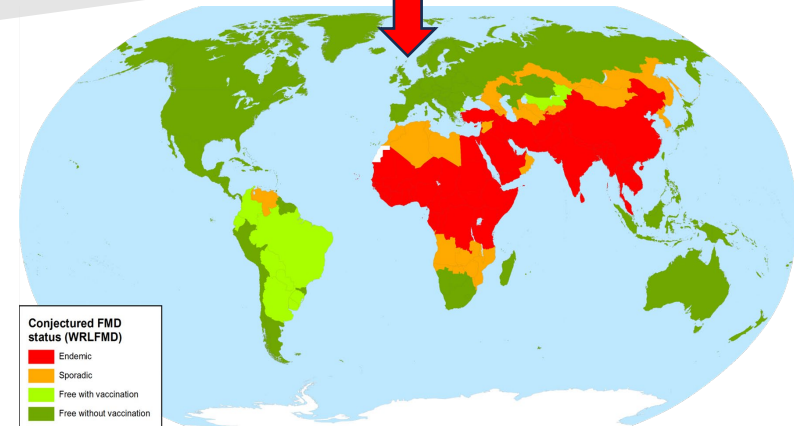
ISO 17025:2017 Std.

- ✓ Ab-NSP Test
- ✓ Ab-LP ELISA
- ✓ Ag- ELISA Typing
- ✓ Real Time RT-PCR (Approve process)



Confirmation FMD diagnostic and In house reagent at WRL, UK

- Every year



Collaboration

WOAH

Support PT program
(sample submission)

RRL-SEA
collaboration and
support activity

WRL: UK

Participating PT
program

FMD diagnosis
for confirmation;
ISO17025:2017

Technical
Support; Training
and discussion

ACDP: AUS

Real Time PCR
specific
serotype:SSRT-
9PCR and
Vaccine
Matching
Study → Suitable
in SEA

JAPAN

SATREPS
project → Rapid
diagnosis study;
JICA

KODIARA Lab;
NIAH, JAPAN: →
Carrier study →
Free zone 2
Information
support

Member countries;

FMD PT Provider

Diagnosis
confirmation,

Presentation
and discussion

Training center

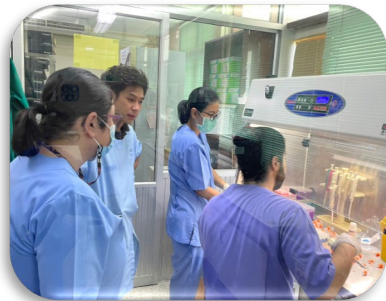
TWINNING PROJECT:

BIOSAFETY and
BIOSECURITY
(Department of
Medical
Sciences &
RPHL)

ACDP and US
University Twin
team

IAEA

BSC calibration
and
maintenance
training
(At RRLFMD-
Thailand; Oct.
2024); By IAEA
to organize the
training for
member
country



Main objectives for 2025

Objective

- ✓ FMDV Diagnosis work, and Preparing to emerging diseases
- ✓ Implementing to the new Biosafety Level 3 (BSL-3) laboratory for FMD diagnosis : *Sample preparation, Virus Isolation, ELISA Typing, Molecular technique, and Research activity*
- ✓ PT Participating with WRL
- ✓ ISO 17043 accreditation: FMD PT Provider; *preparing to accredited*
- ✓ Focus on the bioinformatics analysis and molecular diagnosis for refresh training; Real time PCR; ISO17025:2017; *Maintain and Implementing to be ISO standard*
- ✓ Training center collaboration for member laboratory/ Interested lab;
 - *FMD Diagnosis Training Center Collaboration*
 - *Biosafety Training Center Collaboration*



ขอบคุณปศุสัตว์



ทำด้วยใจ ทำด้วยใจ ทำได้จริง



Thank You For Your Attention