

# SWINE DISEASE IN VIETNAM

Regional Workshop on Swine Disease Diagnosis  
Beijing, P. R. China, 30 – 31 Oct 2019



**WORLD ORGANISATION FOR ANIMAL HEALTH**  
*Protecting animals, preserving our future*

# Basic information

# Pig production 2019

❖ Pig population in 2019: > **30 million**

Pork volume: 3.82 million tons

Pork presents at 70% meals of Vietnamesees

❖ Pig raising households

- 49% of total pig population
- 40% of total pork volume

❖ Large big farms

- 51% of total pig population
- 60% of total pork volume

❖ Breeding pigs

- Sows: 3.8 million
- Boars: 76,000



**Bộ Nông nghiệp và Phát triển nông thôn**  
(Ministry of Agriculture and Rural Development)

**DEPARTMENT OF ANIMAL HEALTH**  
**DAH**

**I. Divisions of DAH**

1. Personnel and Administration
2. PEpidemiology
3. Aquatic Animal Health
4. Inspection & Quarantine
5. Drug & Vaccine Management
6. Veterinary Public Health
7. Legislation & Inspection
8. Planning & Science
9. International Cooperation and Communication
10. Finance

**II. Institutions of DAH**

- National Center for Veterinary Diagnosis
- Regional Animal Health Office No I – VII
- Regional Animal Quarantine & Inspection: QN, LS, LC
- National Center for Vet. Drugs Control No I, II
- National Center for Vet. Hygiene Inspection No I, II

Provincial Department of  
Agriculture and Rural  
Development

Provincial Sub-Department  
of Animal Health

- District Veterinary Station  
- Domestic Inspection  
Station

Communal Veterinary  
Team

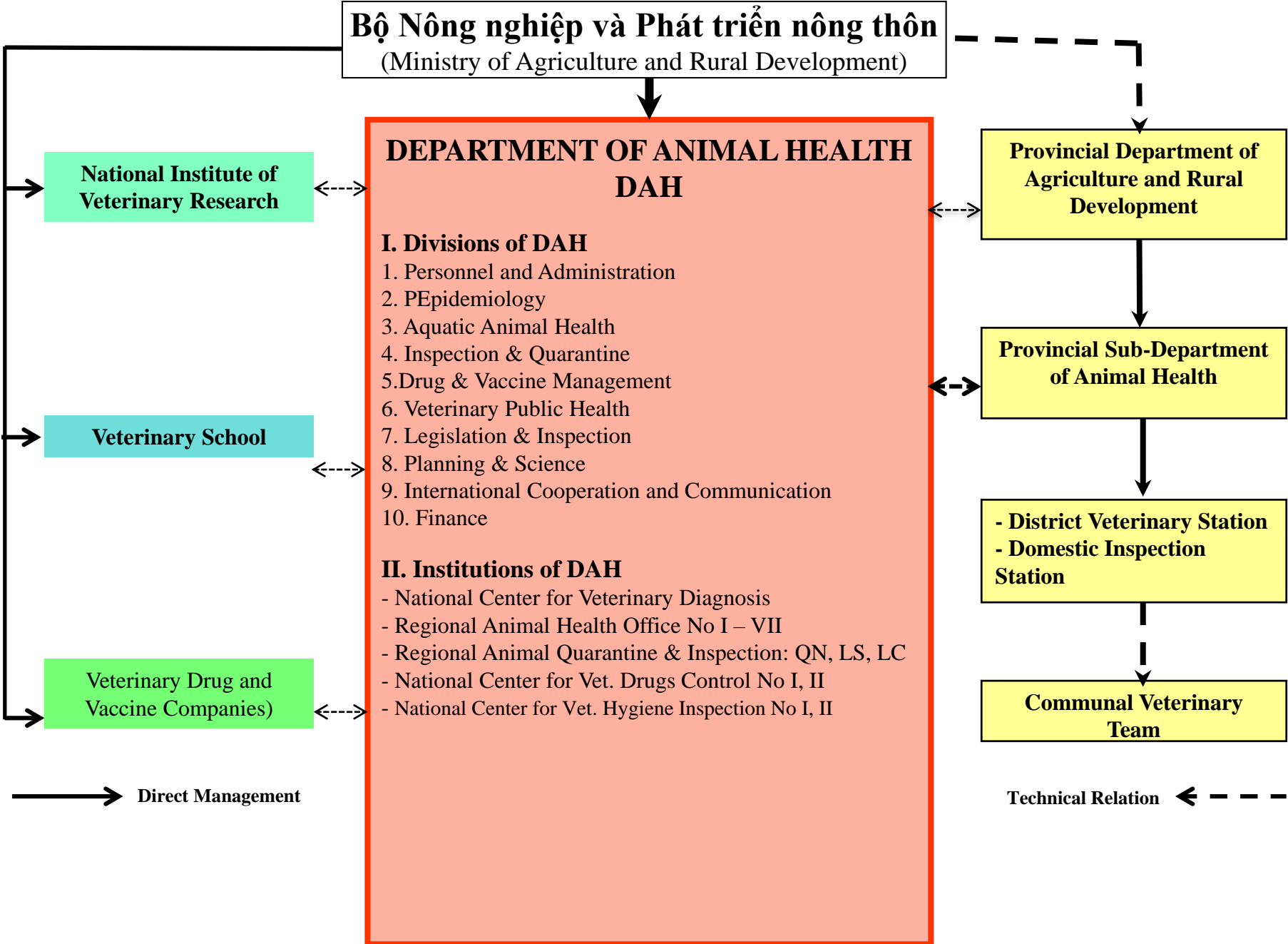
National Institute of  
Veterinary Research

Veterinary School

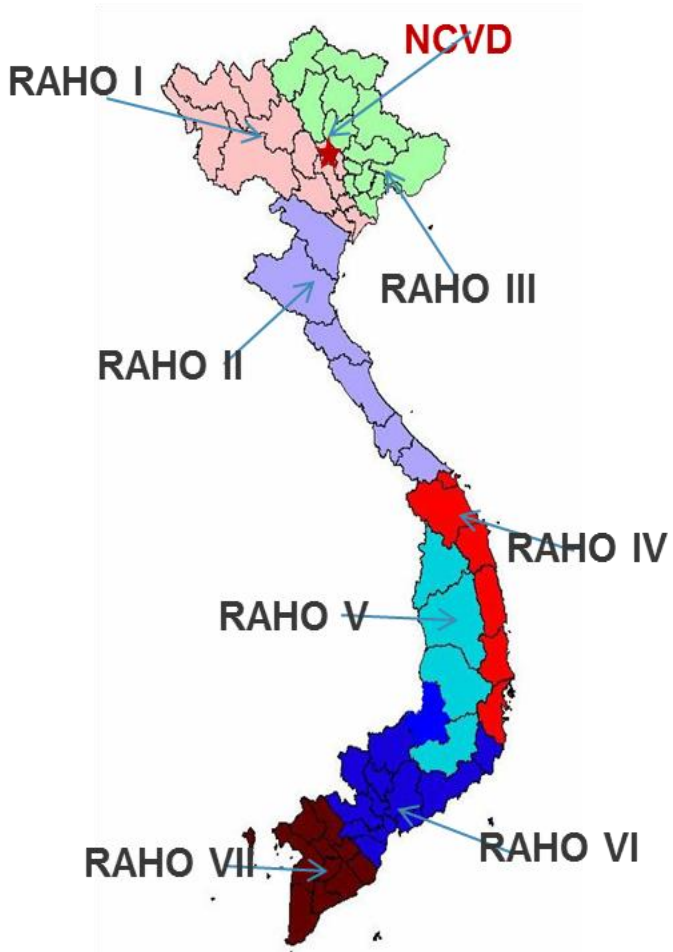
Veterinary Drug and  
Vaccine Companies)

→ Direct Management

← - - - Technical Relation



# Diagnostic System



## NCVD LAB

- Virology
- Serology
- Bacteriology
- Pathology & parasitology
- Fishery
- Ad min unit



# Major disease diagnosis and control

# Major concerning porcine diseases



- **African Swine Fever**
- Classical Swine Fever
- Food and Mouth Disease
- **Porcine Respiratory and Reproductive Syndrom**
- Porcine Circo Virus – type 2
- Porcine Epidemic Diarrhea

- APP
- Glasser
- E.Coli
- Iellitis
- Mycoplasma
- Leptospirosis
- Streptococcus suis
- Erysipelas
- Pasteurelosis



# Classical Swine Fever



## ❖ Situation

- In 2018 (first 6 months): Outbreaks: 94 outbreaks
- In 2019 (first 6 months): Outbreaks: 33, Cases: 739, Deaths: 656

## ❖ Laboratory Diagnosis

### • Virus detection

Real time PCR – OIE/ ISO 17025

Virus isolation: Cell culture PK15

### • Antibody detection

NPLA (OIE) -

ELISA

- **PT:** Participated PT panels organised by AAHL/FAO  
Inter-laboratory comparison

## ❖ Vaccination



# Food and Mouth Disease



## ❖ Situation

- In 2018: Outbreaks: 34 outbreaks, pig: 1.002 (59%)
  - In 2019 (first 6 months): Outbreaks: 12 pig (100%)
- Cases: : 506, Disposed: 423

## ❖ Laboratory Diagnosis

### • **Virus detection:**

**Realtime RT PCR – OIE/ ISO 17025**

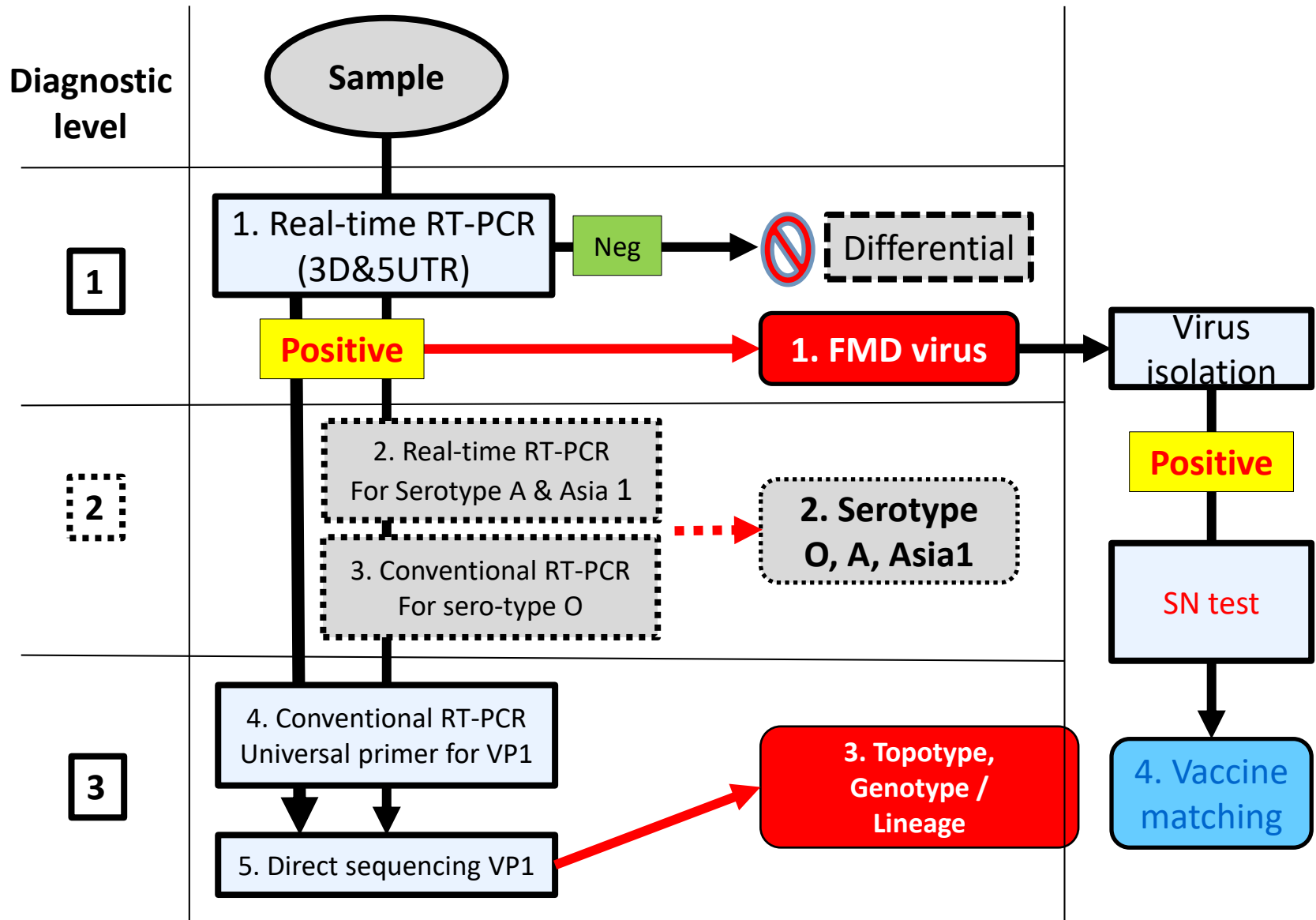
**Virus isolation -OIE**

### • **Antibody detection**

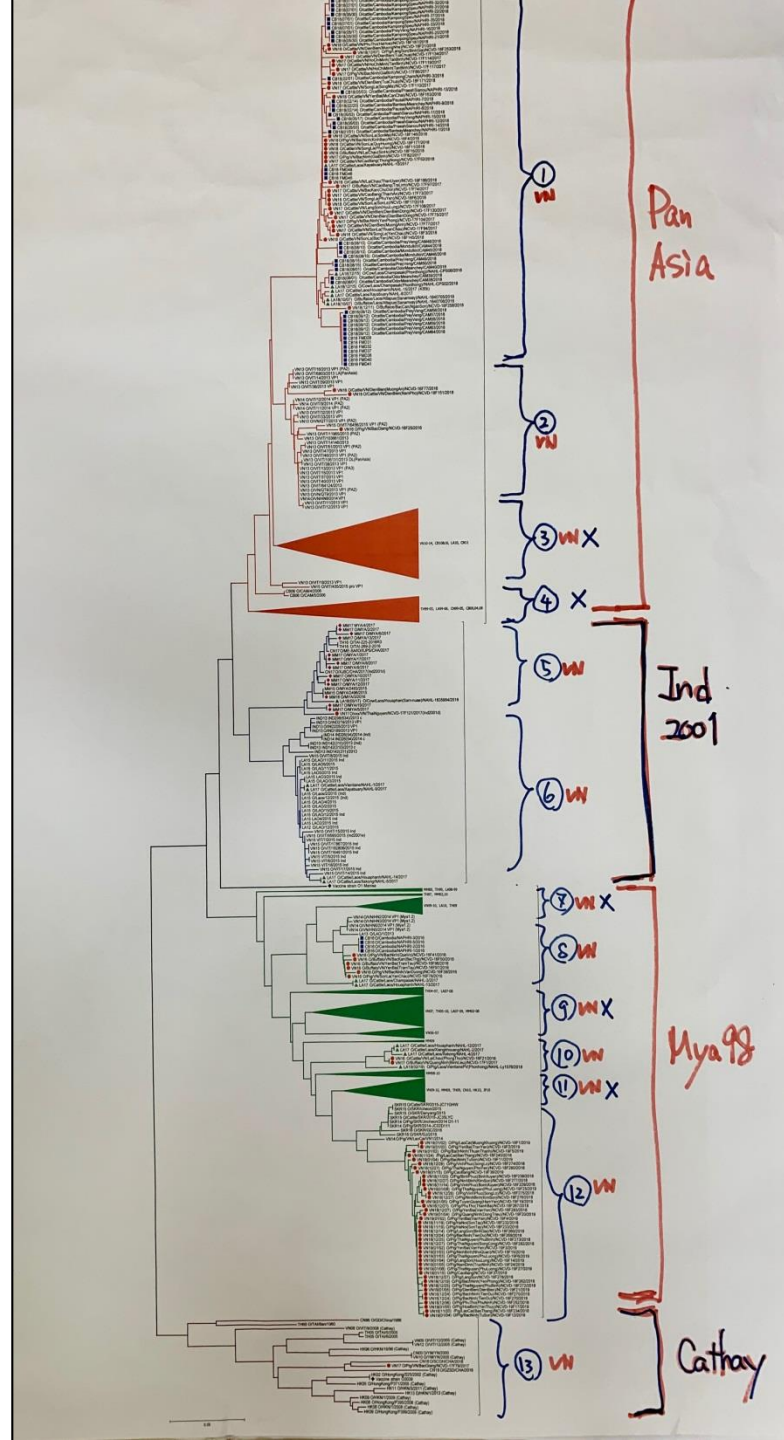
**LP ELSA - OIE / ISO 17025**

**ELISA - 3ABC - OIE / ISO 17025**

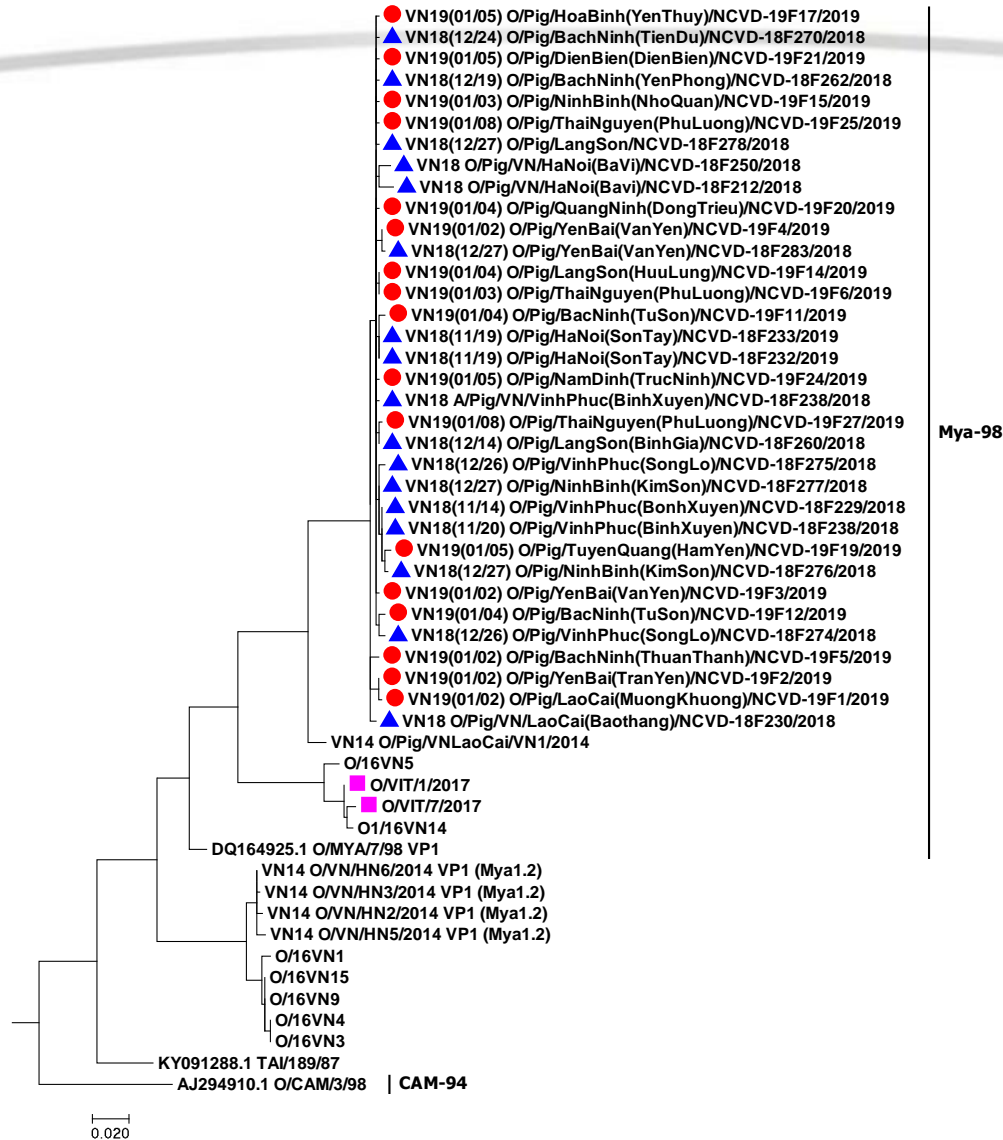
# Laboratory Testing for Diagnosis and Genotyping



# Phylogenetic relationship of FMD Type O viruses in South East Asia 2000-2019



# Food and Mouth Disease



# Transition of FMD genotypes in Viet Nam 2000-2019

Topo-type	Genotype	Group	Year of detection											Comment		
			2000-2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019			
ME-SA	PanAsia	1										17	15		Actively circulating	
		2					25	4	1	2			1		Circulating	
		3														Died out
		4														Never detected
	Ind2001	5										1				Rare
		6								12						Dying
SEA	Mya98	7													Died out	
		8						4		6					Dying	
		9														Died out
		10									1	1				Continue?
		11														Died out
		12							1					23	19	Actively circulating
Cathay	Cathay	13				1						1			Reintroduction in 2017?	

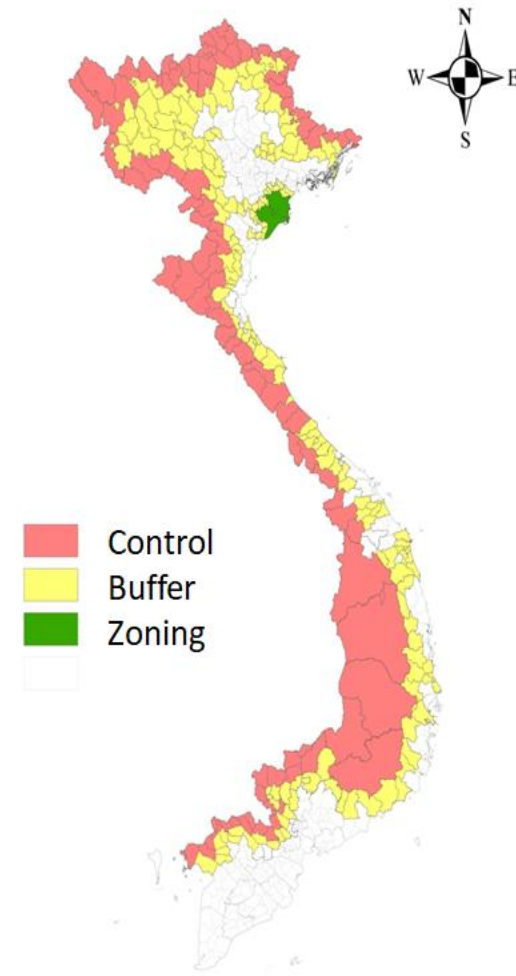
- Actively circulation strain in 2018: PanAsia/Group1 and Mya98/Group12
- Mya98/Group12 may be a new introduction or re-emergence in late 2018. Highly pig adapted.

## Prevention and Control by vaccination:

- ❖ Vaccine matching: collaboration with reference Labs Pirbright to update vaccination guideline
- ❖ Vaccine imported from Merial (France), the vaccines must contain at least 02 of these strains currently circulated in the field:
  - **For serotype O:** O<sub>3039</sub> or O Manisa or O<sub>Taw98</sub> or O Tur 5/09
  - **For serotype A:** A May<sub>97</sub> A22Irq or A May97 or A Tur

# FMD – Prevention and Control

- ✓ National plan on control and prevention of FMD from 2006. –Now: 2016-2020 : **37 Mil USD**
- ✓ Main activity:
  - Vaccination
  - Lab test
  - Surveillance, early detection
  - Animal movement control
  - Management animal slaughtering activities
  - Communication
  - International collaboration
- ✓ National Project on establishment of Animal Disease Free Zones
- ✓ Provincial plans for swine diseases free zone establishments.



# Swine disease control



## Legal documents on control and prevention of animal diseases

**Circular 07/2016/TT-BNNPTNT** stipulating regulations on prevention and control of diseases on terrestrial livestock, in which FMD, PRRS, CSF, Pastuerellosis, etc are in the List of terrestrial animal diseases that are requested for outbreak announcement; List of zoonosis, List of animal diseases that are banned from slaughtering and treatment .

- Farmers must apply animal disease prevention and control measures including regular cleaning and disinfection, compulsory vaccination, routine surveillance.
- Details of animal disease control and prevention guidelines are in the annexes of this Circular.



# Swine disease control



## Legal documents on control and prevention of animal diseases

**Circular 14/2016/TT-BNNPTNT** regulating on animal disease-free zones and establishments including:

1. Apply measures for prevention and control of animal diseases.
2. Carry out surveillance of animal diseases.
3. Have no epidemics of animal diseases.
4. Veterinary activities at the establishment are conducted.

### ***Rights and benefit of animal disease free zones and establishments***

1. Having benefits as regulated at the Clause 2 Article 17, Clause 2 Article 39 and Clause 2 Article 55 of Veterinary Law.
2. For animal disease free zones and establishments: to be allowed moving animal, animal products out of the declared epidemic zones in compliance with the Circular No. 07/2016/TT-BNNPTNT.
3. To be considered for certification of Vietnam Good Agricultural Husbandry Practices (VietGAHP) upon request.
4. To be prioritized participating in trade promotion programs and product advertisements.

# Challenges

- ✓ **Cost of FMD vaccine**
- ✓ **Post vaccination surveillance**
- ✓ **Laboratory FMD tests**
- ✓ **Vaccine matching**
- ✓ **CSF Post vaccination evaluation**
- ✓ **PEDV and bacteria diseases on farms, present but usually not tested .**

# Thank you



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