OFFLU SWINE INFLUENZA GROUP TECHNICAL MEETING

VIETNAM UPDATE

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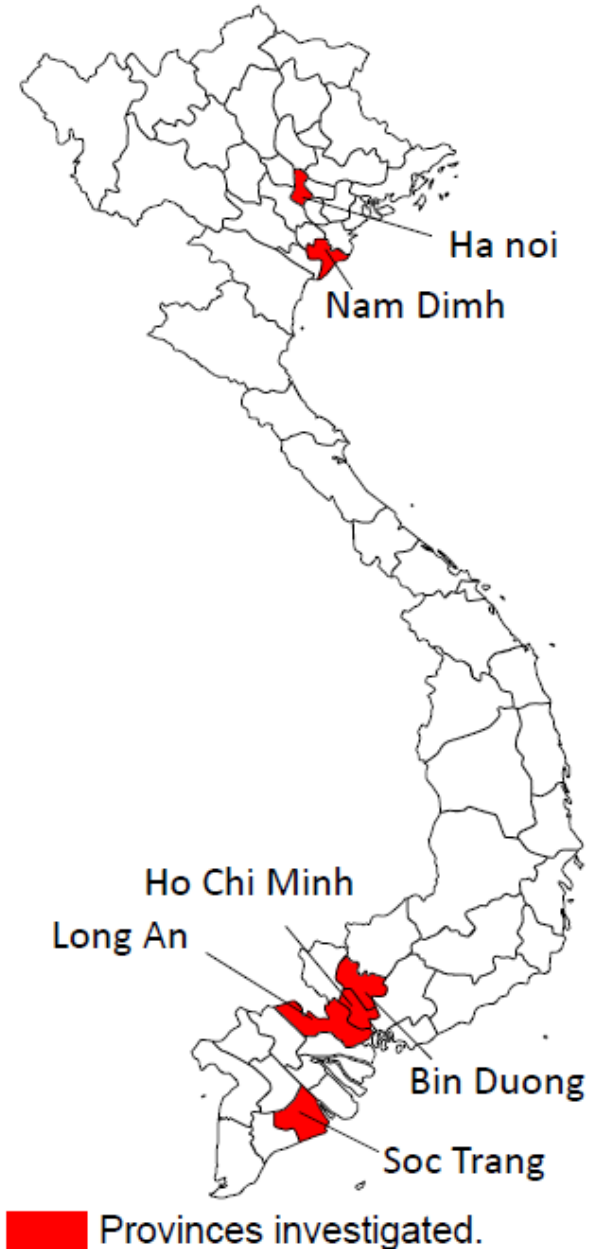
Swine Influenza surveillance activities in Vietnam

- DAH(Vietnam)-NIAH(Japan) cooperation in 2009-2011
- NCVD SIV serological study in 2009
- CIRAD: Transimission of pH1N1 in Vietnamese swine 2009-2010

SIVs Surveillance DAH-NIAH 2009-2011

- Serological surveillance: Sera collected from Slaughterhouse

- Virological surveillance: Swabs collected from farms and some slaughterhouse



Virological surveillance Result

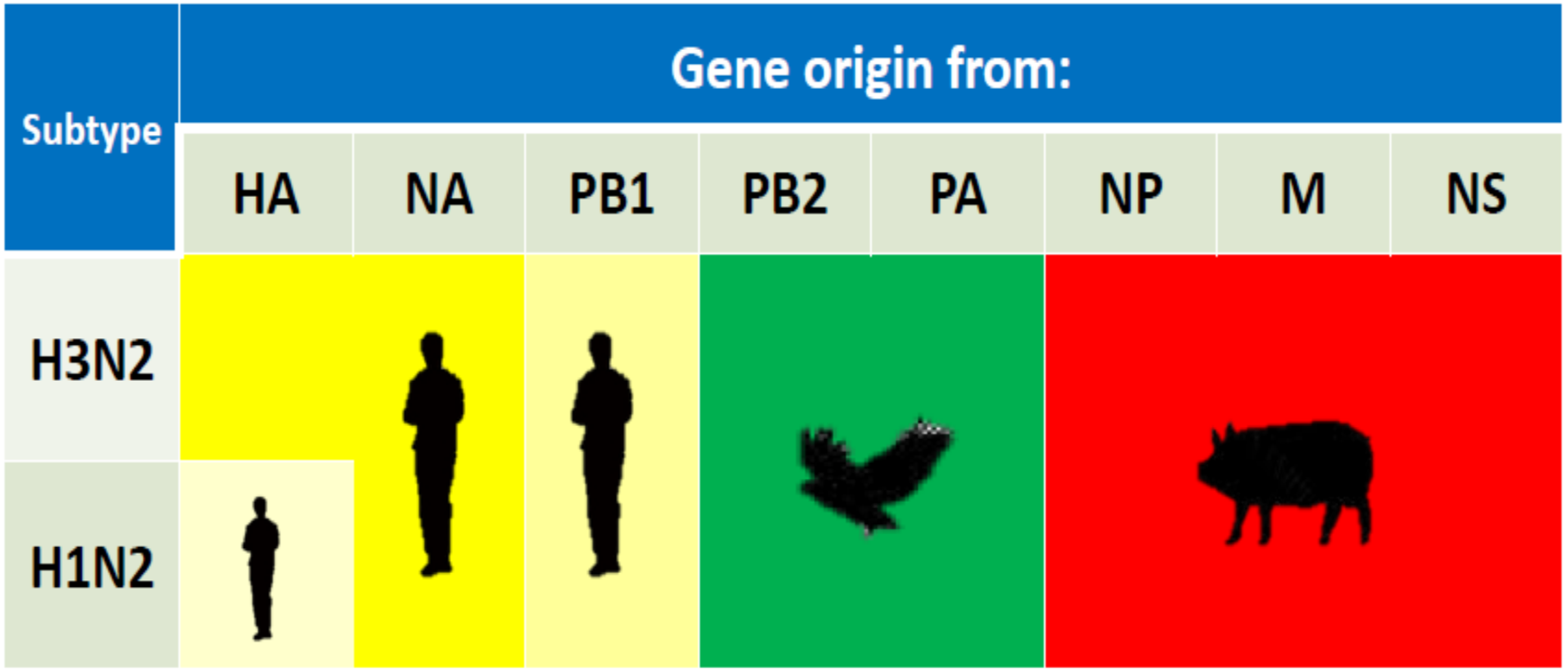
	North	South
Farms	73	15
Slaughter house	0	10
Viruses isolated in farm	pH1N1 7 strains	pH1N1 7 strains H1N2 1 strain H3N2 6 strains
Viruses isolated in slaughter house	-	0
Isolation rate (%)	0.6	1.2

Total isolation rate 0.92% (21/2265)

Virological surveillance Result

Virus Subtypes	Place of dectection	Date of sampling
pH1N1	Nam Dinh	2010/3/13
	Binh Duong	2010/3/1
H3N2	Binh Duong	2010/3/1
H1N2	Binh Duong	2010/3/1

H3N2 and H1N2 viruses were reassortants between human seasonal influenza viruses and a triple reassortant virus

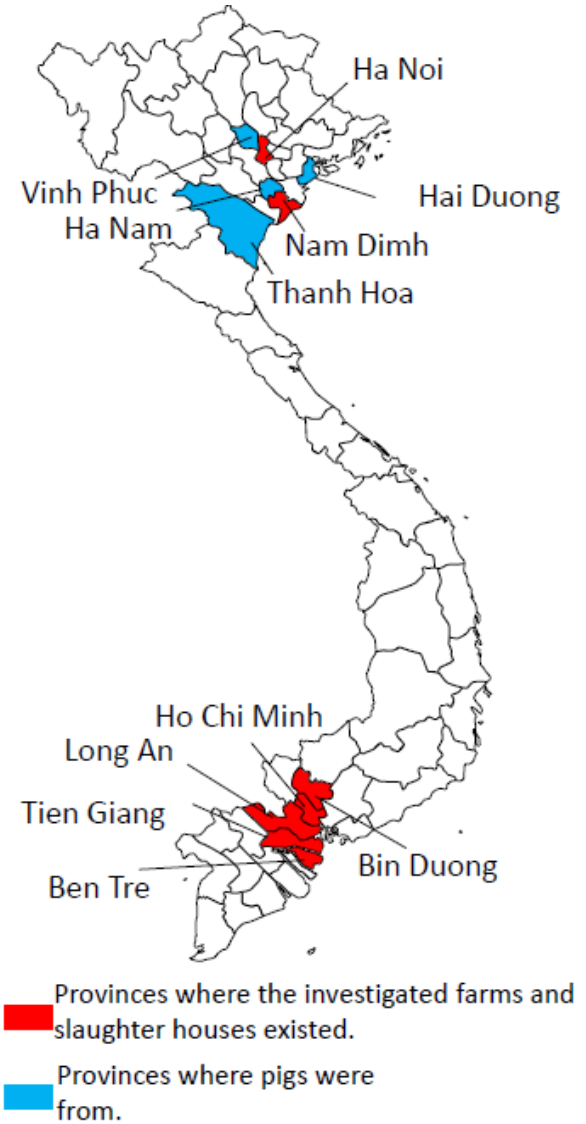


Serological surveillance result

Seroprevalence in Vietnamese pigs

Provinces	Number of sera	Seropositive rate (%) against			
		H1	H3-cluster Ha	H3-cluster Hb	H5-clade 1
Nam Dinh	75	5.3	2.7	0	0
Ha Nam	13	0	0	0	0
Ha Noi	14	0	85.7	0	0
Hai Duong	11	0	0	0	0
Thanh Hoa	4	0	0	0	0
Vinh Phuc	33	0	12.1	0	0
Bin Duong	75	50.7	12.0	0	0
Ho Chi Minh	20	40.0	0	0	0
Long An	30	46.7	0	0	0
Ben Tre	15	33.3	0	0	0
Tien Giang	10	70.0	0	0	0

H3 ・sw/Saraburi/NIAH107725-28/2008 (Cluster Ha)
・sw/Chachoengsao/2003 (Cluster Hb)
H5 ・ck/Thailand/73/2004 (clade1)



NCVD SIV serological study in 2009

Sub-population	Sero-positive ratio (No. positive/ No. tested)					
	Farm A (Bach Ninh)		Farm B (Bach Giang)		Farm C (Bac Lieu)	
	Inf A	PRRS	Inf A	PRRS	Inf A	PRRS
Sow	50% (5/10)	70% (7/10)	100% (16/16)	57% (9/16)	97% (29/30)	90% (27/30)
Boar	NA*	NA	90% (9/10)	10% (1/10)	100% (5/5)	80% (4/5)
Weaner (1-2M)	50% (5/10)	90% (9/10)	NA	NA	NA	NA
Grower (3-4M)	100% (5/5)	100% (5/5)	32% (7/22)	0% (0/26)	30% (11/37)	63% (24/38)
Finisher (5-6M)	100% (5/5)	100% (5/5)	NA	NA	75% (9/12)	92% (11/12)
Total	67% (20/30)	87% (26/30)	67% (32/48)	19% (10/52)	64% (54/84)	78% (66/85)

* NA: samples not available for testing

SIV surveillance activities in future

Emerging Pandemic Threat+

Table 1: Sampling strategy for each commune for the three production systems for influenza A testing on serum and nasal samples.

	Serum Samples			Nasal Samples
	Sow	**4-8 wk**	**12-20 wk**	**4-8 wk**
Production System 1				
Breeding farm (1)	5[1]	10[2]	10[3]	20[2]
Breeding farm (2)	5[1]	10[2]	10[3]	20[2]
	10	20	20	40
Subtotal 1			**50**	**40**
Production System 2				
Fattening farm (1)	5[4]		10[5]	20[3]
Fattening farm (2)	5[4]		10[5]	20[3]
	10		20	40
Subtotal 2			**30**	**40**
Production System 3				
Small holder farms (1)	5[6]	n/a	n/a	5[6]
Small holder farms (2)	5[6]	n/a	n/a	5[6]
Small holder farms (3)	5[6]	n/a	n/a	5[6]
Small holder farms (4)	5[6]	n/a	n/a	5[6]
	20	0	0	20
Subtotal 3				**20**
Total pigs sampled				**200**

[1]Assuming prevalence is 50% and total sow population in farm is 200, [2]Assuming prevalence of 25% and total pig population of age 4-8 weeks is 250, [3]Assuming prevalence of 25% and total pig population of age 12-20 weeks is 250, [4]Assuming prevalence is 50% and total sow population in farm is 200, [5]Assuming prevalence is 25% and total pig population of age 12-20 weeks is 250 and [6]Assuming prevalence is 50% and total population of 5 sows and 5 weaned pigs,

Viet Nam Expected Output

- Full influenza viral characterisation in influenza viruses in swine production systems
- Bank of samples from swine, with full genome sequencing
- Better understanding of the viral evolution at the human swine interface
- Linking molecular information with agro-ecological factors to identify hot spots of disease transmission at the human swine interface

Acknowledgment

- FAO, OIE
- JICA, NIAH-JAPAN
- Department of Animal Health-Vietnam
- NCVD