APPENDICES

Appendix 1 MEDIA PREPARATION

Buffered Peptone Water (BPW; Merck KgaA, Germany)

Preparation: suspend 25.5 g in 1 liter of de-mineralized water, autoclave (15 min. at 121^0C). pH: 7.0 ± 0.2 at 25^0C.

Crystal-violet neutral-red bile glucose agar acc. to MOSSEL for microbiology (VRBD Agar; Merck KgaA, Germany)

Preparation: suspend 39.5 g in 1 liter of de-mineralized water and heat in a boiling water bath or in free flowing steam with frequent stirring until completely dissolved. Afterwards do not boil for more than 2 minutes. Do not autoclave, do not overheat. pH: 7.0 ± 0.2 at 25^0C.

Nutrient agar (NA; Difco, USA)

Preparation: suspend 23g in 1 liter of purified water. Mix thoroughly. Heat with frequent agitation and boil for 1 minute to completely dissolve the powder. Autoclave at 121^0C for 15 minutes. Final pH: 6.8 ± 0.2

Glucose agar

Composition:

Enzymatic digest of Casein	10.0 g
Yeast extract	1.5 g
Glucose	10.0 g
NaCl	5.0 g
K_2HPO_4	0.2 g
Bromocresol purple	0.015 g
Agar	10.0 g
Distilled water	1 liter

Preparation: dissolve the components by heating, then dispense the culture medium into sterile tubes. Autoclave at 121^0C for 15 minutes. Leave the tubes in a vertical position. pH: 7.0 ± 0.2 at 25^0C.

Oxidase reagent

Dissolve 1g of *N*,*N*,*N'*,*N'*-Tetramethyl-*p*-phenylenediamine dihydrochloride ($C_{10}H_{16}N_2$.2HCl) with 100 ml of distilled water. Keep in dark. Better if the reagent is prepared just before use.

Appendix 2 GENERAL INFORMATION FORM OF SLAUGHTERHOUSE

I. Information on the slaughterhouse

1. Name of the slaughterhouse: ……
2. Name of manager: ……
3. Mailing address:
   ……
   ……
   ……
4. Telephone number: ……..… Fax: ……..……
5. Email: ……..
6. Type of slaughterhouse: …….
7. Area of pig pen: ……
8. Area of slaughter line: ……

II. Information on slaughter procedure

1. Average capacity of slaughtering (number of pigs slaughtered per day): …
2. Order of stages (circle if applicable):
   a. Stunning by: ……..
   b. Bleeding by: ……..
   c. Scalding
   d. Dehairing
   e. Singeing
   f. Pre-evisceration washing
   g. Evisceration
   h. Post-evisceration washing
   i. Splitting
   j. Chilling
   k. Cutting
   l. Further processing
3. Time to start slaughtering daily: …….
4. Time to finish slaughtering daily: ……

5. Procedure of cleaning and sanitation (C/S):

   ……
   ……
   ……
   ……
   ……
   ……
   ……

6. Frequency of cleaning and sanitation: ……..
7. Disinfectants used: ……..
   ……
8. Working dilution: …….
9. Manufacture: ……
10. Date of expiration: …….
11. Other remarks:

    ……
    ……
    ……
    ……
    ……

III. Information on each slaughter day.

Time of visit: 1

1. Date of visit (dd/mm/yy): ……..…
2. Pig density in the pen: …….
3. Source of slaughtered pigs that day: ……
4. Number of pigs slaughtered in that day: …….
5. Time to clean and disinfect: ……
6. Person in charge of disinfecting: ……..

Time of visit: 2

1. Date of visit (dd/mm/yy): ……
2. Pig density in the pen: ……

3. Source of slaughtered pigs that day: ……
4. Number of pigs slaughtered in that day: …….
5. Time to clean and disinfect: ……
6. Person in charge of disinfecting: ……..

Time of visit: 3

1. Date of visit (dd/mm/yy): ……
2. Pig density at the pen: ……
3. Source of slaughtered pigs that day: ……
4. Number of pigs slaughtered in that day: …….
5. Time to clean and disinfect: ……
6. Person in charge of disinfecting: ……..

Time of visit: 4

1. Date of visit (dd/mm/yy): ……
2. Pig density at the pen: ……
3. Source of slaughtered pigs that day: ……
4. Number of pigs slaughtered in that day: …….
5. Time to clean and disinfect: ……
6. Person in charge of disinfecting: ……..

Time of visit: 5

1. Date of visit (dd/mm/yy): ……
2. Pig density at the pen: ……
3. Source of slaughtered pigs that day: ……
4. Number of pigs slaughtered in that day: …….
5. Time to clean and disinfect: ……
6. Person in charge of disinfecting: ……..

Appendix 3 LABORATORY TEST RESULT FORM

Date of testing (dd/mm/yy): ……

Order	**Sample ID**	**Swab volume**	**Dilution step**	**Number of colonies**		**cfu**	
				Plate 1	**Plate 2**	**Per ml**	**Per cm^2**
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

Other remarks:

……

……

DECLARATION

I, the under signed, declare that the thesis is my original work and has not been presented before for a degree in any other university.

Name: Pham Thanh Long

Signature……....

Date of submission……

CURRICULUM VITAE

1. **Personal data**

   Family name: PHAM

   First name: THANH LONG

2. **Home address/*Direction particular***

   404 – A2, To 31 – Nghia Do – Cau Giay, Hanoi, Vietnam.

   Telephone number: +84.4.37562042

   Email: ptlong.vndah@gmail.com

3. **Mailing address/*Direction postal***

   Epidemiology Division – Department of Animal Health.

   15/78th lane – Giai Phong Road, Dong Da District, Hanoi, Vietnam.

   Telephone number: +84.4.38696788/ext.17

   Fax: +84.4.38686339

   Cell phone: +84.912632944

   Email: phamthanhlong@dah.gov.vn

   Website: www.dah.gov.vn

4. **Gender:** Male
5. **City and country of birth:** Hanoi – Vietnam
6. **Date of birth:** July 17th,1975
7. **Marital status:** Married
8. **Number of children:** 02
9. **Present nationality:** Vietnamese
10. **Mother tongue:** Vietnamese

11. Education background

Education Institutions	Place	Major fields of study	Degrees/diplomas obtained	Years attended	
				From	To
Le Quy Don High School	Hanoi - Vietnam	General	National Bachelor	Sep. 1990	May. 1992
Hanoi Agriculture University No 1	Hanoi - Vietnam	Veterinary Medicine Science	D.V.M	Sep. 1992	Aug. 1997
Freie Universität Berlin and Chiang Mai University	Berlin – Germany and Chiang Mai - Thailand	Master course on Veterinary Public Health		Oct. 2007	Sep. 2009

12. Additional training

Education Institutions	Place	Major fields of study	Certificates obtained	Years attended	
				From	To
DSE cooperated with Freie Universität Berlin	DSE Centres in Leipzig, Munich and FUB, BgVV - Germany	New technical regulations and voluntary standards in infectious animal disease control	Qualified	Jan. 2001	Jul. 2001
National Institute of Animal Health	Tsukuba - Japan	Research on Veterinary Technology	Qualified	Mar. 2002	Oct. 2002
National Institute of Animal Health	Bangkok - Thailand	CSF, FMD, Rinderpest and PPR diagnosis	Qualified	Nov. 2003	Nov. 2003
Reference Laboratory for FMD in South East Asia	Pakchong, Nakhoratchasima - Thailand	FMD diagnosis	Qualified	Jan. 2005	Feb. 2005
Foreign Animal Disease Diagnostic Laboratory	Plum island – New York - USA	International Foreign Animal Disease Diagnostics Course	Qualified	Aug. 2006	Aug. 2006

13. Employment

Years	Organization	Position
Oct.1997– Aug.2006	National Center for Veterinary Diagnostics	Diagnostician in Virology Section
Sep.2006– Sep.2007	Food and Agriculture Organization of the United Nations (Project: OSRO/RAS/602/JPN)	National Consultant of Avian Influenza Programme *(Full time contracted staff)*
Sep.2006 - present	Department of Animal Health	Specialist of Epidemiology Division *(Official staff)*

14. Publications

1. Nguyen Thu Ha, **Pham Thanh Long**, Nguyen Tung.
   Study on Newcastle disease virus strains isolated from chickens, quails and Newcastle disease control in quails. Manual of Vietnam Veterinary Science Research, year 1998 –1999, 36-51.

2. Nguyen Thu Ha, **Pham Thanh Long**, Nguyen Tung.
   Biological properties of Newcastle disease virus strains isolated from chickens, quails and the Newcastle disease in quails. Journal of Biology. Vol. 21, No 4. Dec.1999, 59-64.

3. Nguyen Thu Ha, **Pham Thanh Long**, Nguyen Tung.
   Study on the transmissibility of Newcastle disease virus in quails. Veterinary Sciences and Technique magazine (Vietnam Veterinary Association). Vol. VII, No 1. 2000, 38-42.

4. Nguyen Dang Khai, Nguyen Thu Ha, **Pham Thanh Long**.
   Using ELISA technique for Foot and mouth disease diagnosis. Veterinary Sciences and Technique magazine. Vol. VII, No 3. 2000, 100-102.

5. **Pham Thanh Long**, Phuong Song Lien.
   Detection of viral agent causing acute death in rabbit breeder flock. Veterinary Sciences and Technique magazine. Vol. XI, No 1. 2004, 95-97.

6. **Pham Thanh Long**, Phuong Song Lien, Nguyen Van Cam, Nguyen Trong Cuong, Nguyen Thu Ha.
Diagnostic results of goat pox from some outbreaks in Vietnam. Veterinary Sciences and Technique magazine. Vol. XIII, No 2. 2006, 63-66.

7. **Pham Thanh Long**, Nguyen Thu Ha, To Long Thanh.
Sheep and goat pox. Veterinary Sciences and Technique magazine. Vol. XIII, No 5. 2006, 83-87.