

APPENDIX

Appendix A: EQUIPMENT, MATERIALS, MEDIA AND REAGENTS

1. Lab Equipment and materials

Usual laboratory equipment and in addition:

- 1) Sufficient work area, level table with ample surface in room that is clean, well lighted and well ventilated, and reasonably free of dust and drafts
- 2) Storage space, free of dust and insects and adequate for protection of equipment and supplies
- 3) Petri dishes, glass or plastic (at least 15 x 90 mm)
- 4) Pipettes with pipette aids or pipettors, 1, 5, 10, and 25 ml graduated in 0.1 ml units
- 5) Dilution bottles, 6 oz (160 ml), borosilicate-resistant glass, with rubber stoppers or plastic screw caps
- 6) Pipette and petri dish containers, adequate for protection
- 7) Water bath, for tempering agar, thermostatically controlled to $45 \pm 1^\circ\text{C}$
- 8) Incubator, $35 - 37^\circ\text{C}$ and $40 - 42^\circ\text{C}$
- 9) Colony counter, dark-field, Quebec, or equivalent, with suitable light source and grid plate
- 10) Refrigerator, to cool and maintain samples at $0 - 5^\circ\text{C}$
- 11) Thermometers (mercury) appropriate range and/or electronic
- 12) Top pan scale capable of weighing to 0.1g
- 13) Stomacher machine
- 14) Vortex mixer

2. Equipment and material for sample collection

- 1) Scissors, forceps, Stomacher (sterile) bags
- 2) Sterile cotton wool swabs
- 3) Buffered peptone water (BPW)
- 4) Marker pens.
- 5) Alcohol, cotton, lighter
- 6) Gloves, boots and lab coat
- 7) Ice box with ice

3. Media, reagents and chemicals

- Peptone saline diluent (Maximum recovery diluent)
- Violet red bile glucose agar (VRBG)
- Glucose agar
- Nutrient agar (NA)
- BPLS Agar (Brilliant-green Phenol-red Lactose Sucrose Agar)
- XLD (Xylose Lysine Deoxycholate) Agar
- Buffered Peptone Water (BPW)
- Muller Kaufmann Tetrathionate broth (MKTT).
- Rappaport -Vassiliadis broth (RVS)
- Triple Sugar Iron Agar (TSI)
- Lysine Iron Agar (LIA)
- Urea Agar (Christensen's)
- Polyvalent and single grouping somatic (O) and flagellar (H)., and virulent (Vi) antisera
- Physiological Salin (85% NaCl)
- Oxidase reagente

**Appendix B: QUESTIONNAIRE FOR COLLECTING DATA ON FARM
MANAGEMENT PRACTICES**

Date ____/____/____

Interviewee name: _____ title _____

Interviewer name: _____ title _____

1. Name of the farm _____
2. Name of owner _____
3. Location _____
4. Date of establishment ____/____/____
5. How many pigs are there in the farm? _____, Piglets in different age groups: 1) _____ 2) _____ 3) _____
6. What is the Source(s) of piglets _____
7. 1) Breeding in the farm? Yes _____ No _____
2) Purchasing from outside? Yes _____ No _____
3) If yes, where? _____
8. Do the pigs have individual numbers? Yes _____ No _____
9. Feed and feeding system
 - Is the feed being mixed in the farm? Yes _____ No _____
 - Purchased from outside? Yes _____ No _____
 - Manual feeding _____ automatic feeding _____
 - Drinking: - Tap water Yes _____ No _____
- Underground water Yes _____ No _____
10. Vaccination program
 - 1) _____
 - 2) _____
 - 3) _____
11. Main health problem (disease)
 - 1) respiratory _____ 2) Gastro-intestinal _____
 - 3) others _____
12. Is the treatment effective? Yes _____ N _____
13. What drugs are used?

- 1) _____
- 2) _____
- 3) _____

14. Condition of the holding:

- 1) Roofing: galvanized iron _____ tile _____; other _____
- 2) Floor: Concreted _____ un-concreted _____
clean _____ dirty _____
- 3) Ventilation: Yes _____ No _____
- 4) Waste management: good _____ poor _____
- 5) Other
comments _____

15. How many pigs are being sent to the slaughterhouse in one shipment? _____

16. Who is responsible for the transportation

- 1) farmer Yes _____ No _____
- 2) middle man Yes _____ No _____
- 3) slaughterhouse Yes _____ No _____

17. Condition of transport (vehicle): Good _____ poor _____

18. Other comments

Appendix C: QUESTIONNAIRE FOR COLLECTING INFORMATION IN THE SLAUGHTERHOUSE

1. General Information on Slaughterhouse

Registration number	
Registration date	
Name of slaughterhouse	
Address	
Owner's name	
Date of establishment	
Species of animals approved for slaughtering	
Average number of animals slaughtered per day	
Capacity of slaughtering per day	
Number of inspectors	
- Veterinarians from central government	
- Veterinarians from local government	
- Assistant veterinarians	
Number of employees	
Operation days per year	
Countries importing meat derived from the animals slaughtered in this slaughterhouse	
The others	

2. Questionnaire on the facilities of slaughterhouse

	Checking points	Result of checking		Comments
		O	X	
1	Is there a mooring place (the place where pigs are			

	kept before slaughtering), inspection place to check condition of pigs to be slaughtered, slaughtering room, disinfection preparation room (the place to prepare disinfection), waste water disposal facility, waste disposal facility, place for disinfection of vehicles for transports of pigs and the place where employees can take a rest and employees can change clothes (locker room)?			
2	Conditions of drainage at the floor of slaughtering room excellent?			
3	Is there a safety device for lighting equipment at the slaughtering room so that broken pieces of the lighting equipment could not be contaminated in the meat?			
4	<ul style="list-style-type: none"> - Is there a device to prevent entrance of insects at the windows at the slaughtering room and the meat storage room? - Is there a device to prevent entrance of mice at the drain-outlet of the slaughtering room and the meat storage room? 			
5	Is there a system to supply at least 83-centigrade water to disinfect the knives used for slaughtering lines?			
6	Is the water-supply facility equipped with a system to supply the water of which quality is in accordance with related regulations?			
7	<ul style="list-style-type: none"> - Are toilets located at a certain place so that the toilet would not affect the sanitary conditions of slaughtering room? - - Is there a device to prevent entrance of insects and mice to the toilets? 			

8	Is there a system to control the temperature for preservation of meat at the refrigerator and freezer?			
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3. Questionnaire on sanitary administration of slaughterhouse

	Checking points	Result of checking		Comments
		o	x	
1	<ul style="list-style-type: none"> - Is there a guideline for sanitary administration of slaughterhouse? - Are regular examinations conducted in accordance with the guideline for sanitary administration of slaughterhouse? 			
2	Is the examination record of the sanitary administration of slaughterhouse kept more than 6 months?			
3	Are all internal facilities and equipment at the slaughtering room always cleaned before and after slaughtering?			
4	Are slaughtering workers always dressed in sanitary wear, sanitary cap and sanitary shoes during slaughtering work?			
5	Is slaughtering conducted under the status that pigs are hung?			
6	Do workers often disinfect slaughtering knives and utensils with at least 83-centigrade water to prevent contamination of carcass during slaughtering work?			
7	Do managers of the slaughterhouse implement education programs for workers on the basis of their own sanitary administration guideline?			

8	<ul style="list-style-type: none"> - Does the slaughterhouse have the HACCP administration applied to the slaughterhouse? - When was this slaughterhouse approved by the HACCP? Date, Month, Year 			
9	<p>Are antibiotic residual tests conducted as a form of random sampling tests against the pigs?</p> <p>Are the results of the antibiotic residual tests kept more than 6 months?</p>			
10	<p>Are microbial tests such as the total number of bacteria conducted as a form of random sampling tests against the carcass?</p> <p>Are the results of the antibiotic residual tests kept more than 6 months?</p>			

CURRICULUM VITAE

1. Personal data:

- Name: Phouth INTHAVONG (Mr)
- Date of birth: 8 May 1968
- Nationality: Lao
- Marital status: Married
- Home address: Ban Phakhao, Nuay 29, House No. 454,
Muang Xaythany (District),
Vientiane Capital, Lao P.D.R.
Tel.: 856 21 710 884
E-mail: phouthity@hotmail.com
drphouth@yahoo.com

2. Present Working place: National Animal Health Center

Department of Livestock and Fisheries
Ministry of Agriculture and Forestry
P. O. Box: 811, Vientiane, Lao P.D.R.
Tel.: 856 21 216 380
Fax: 856 21 415 674
E-mail: laonahc@laotel.com

- Work position: Veterinary officer
- Work experience:
 - 1992 – 1999 National Institute of Vaccine Production
 - Head of Virology Section
 - Production of rabies, swine fever and duck plague vaccines.
 - 1999 – 2003 National Animal Health Center
 - Head of Veterinary inspection unit

3. Education background:

- 1975 – 1980 Primary school in Huaphanh Province
- 1980 – 1983 Secondary school in Vientiane

- 1983 – 1986 High school in Vientiane
- 1986 – 1992 Doctor of Veterinary Medicine
Faculty of Veterinary Medicine
Moldavian State Agricultural University
Republic of Moldova (Former Soviet Union).
- 4. Foreign language: Russian, English.
- 5. Professional training:
 1. THE 2nd REGIONAL TRAINING COURSE ON SEROLOGICAL DIAGNOSIS OF IMPORTANT LIVESTOCK DISEASES AND ZONOSESES, AND MAINTENANCE OF LABORATORY EQUIPMENT (Faculty of Veterinary Medicine, Chiang Mai University Thailand) January 25th – February 12th, 1999
 2. 7th TRAINING COURSE IN SEAFOOD SAFETY FOR ASEAN (Marine Fisheries Research Department, Singapore) 5th – 16th March 2001
 3. PREPARATORY ENGLISH LANGUAGE TRAINING UNDER SOUTH-SOUTH COOPERATION (Training Department, Samut Prakarn, Thailand) 1st – 30th June, 2001
 4. FRESHWATER AQUACULTURE (Training Department, Samut Prakarn, Thailand) 1st – 28th September 2001
 5. THE REGIONAL TRAINING IN MEAT INSPECTION IN ASIA (Veterinary Management Institute, Kuala Lumpur, Malaysia) 1st– 28th April 2002.

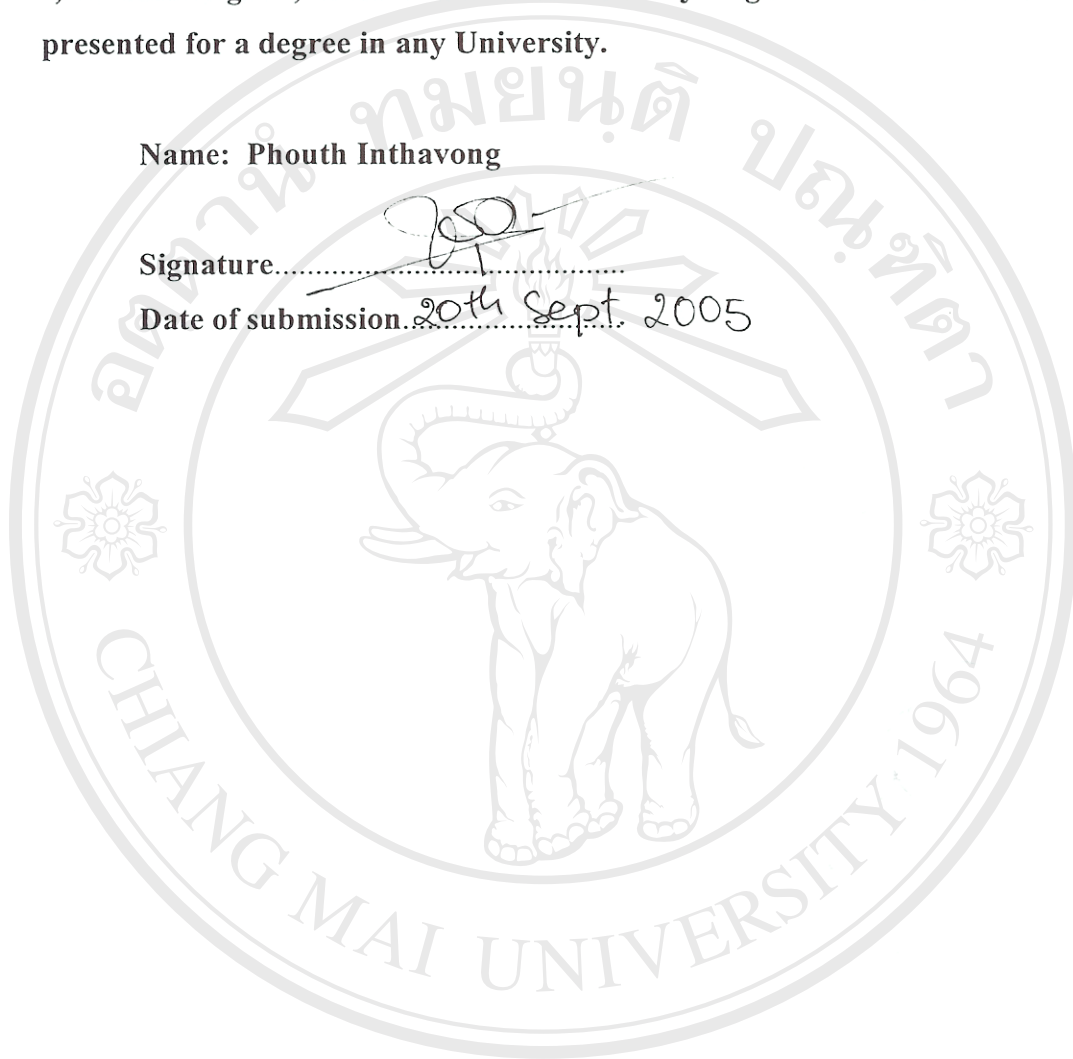
DECLARATION

I, the undersigned, declare that the thesis is my original work and has not been presented for a degree in any University.

Name: Phouth Inthavong

Signature.....

Date of submission. 20th Sept. 2005



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