Overseas Practice on (Field Epidemiology, Collaborative Research) 2014/12/30

report form（For Student） (Year/Month/Day)

Name	Duc-Huy CHU
Laboratory	Microbiology
Year (Grade)	2
Place of practice	- Department of Animal Health of Vietnam (Hanoi city, Vietnam) - Sub-Department of Thua Thien Hue province, Vietnam (Hue city, Vietnam) - National Center for Veterinary Diagnostic, Vietnam (Hanoi city, Vietnam)
Period of practice	15 days, from 29th November, 2014 to 14th December, 2014
Purpose	

Summary of activities（about 800 words, provide photos, tables and figures that clearly show the activities during the period）

I. Background

Previous studies on the avian influenza (AI) surveillance programs in Vietnam indicated that live bird markets (LBMs) have the potential to act more than backyard farms as the primary source of AI virus as well as H5N1 HPAI virus to amplify, maintain, circulate and transmit the virus in the environment in Vietnam (Okamatsu *et al*., 2013; Nishi *et al*., 2013). However, it is very hard to stop all LBMs in Vietnam or in other developing countries now due to the habit of local consumers or traditional culture in there. Therefore, Graduated school of Veterinary Medicine, Hokkaido University, especially, Prof. Yoshihiro Sakoda from laboratory of Microbiology and his colleagues developed AI surveillance on LBMs program in Hue city, central part of Vietnam to help Vietnamese government minimizes the risks of AI transmission from LBMs to outside by carrying out virological survey and improvement of biosecurity application at LBMs level. Taking this opportunity, I want to enhance well my knowledge on AI transmission and risk assessment on LBMs through the practice on Field Epidemiology in Vietnam.

II. Aims

- To continually monitor AI virus prevalence at LBMs by carrying out an active AI surveillance program at LBMs with and without applying biosecurity measures.
- To evaluate the previous results by improvement of hygiene status at LBMs.

III. Activities

- Negotiating with local authority for collecting samples in the field for the AI surveillance at LBMs (Activity 1)
- Collecting swab samples from poultry at LBMs and how to manage sample in the field (Activity 2)
- Investigating the knowledge, attitude and practices (KAP) of sellers at LBMs using questionnaire form for risk

assessment (Activity 3)

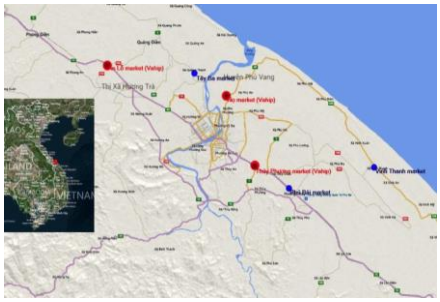
- Screening test for all collected samples at National Center for Veterinary Diagnostics in Hanoi, Vietnam (Activity 4)

IV. Results

Activity 1: Negotiating with local authority for collecting samples in the field for the AI surveillance at LBMs

In the 1st day (1st December), we had some discussions with leaders and all staff of Hue Sub-Department of Animal Health for the implement of sample collection at live bird markets around Hue city. In this time, we pointed out some weak points in the field from the previous time (1st round, September 2014) such as some mistakes when labeling on the tubes of swab samples and how to collect true information for questionnaire form. We determined 6 LBMs for collecting sample; these 6 LBMs are the same LBMs in last time. Totally, 600 samples and 60 questionnaire forms will be collected at 6 LBMs:

- 100 samples per LBM including tracheal swabs and cloacal swabs of 60 chickens, 30 ducks and 2 muscovy ducks. Other 8 samples are environmental sample including feces and wasted water at LBM.
- 10 questionnaire forms for each LBM.
- Totally, we set up 6 teams for sample collection at LBMs and 2 persons for each team.



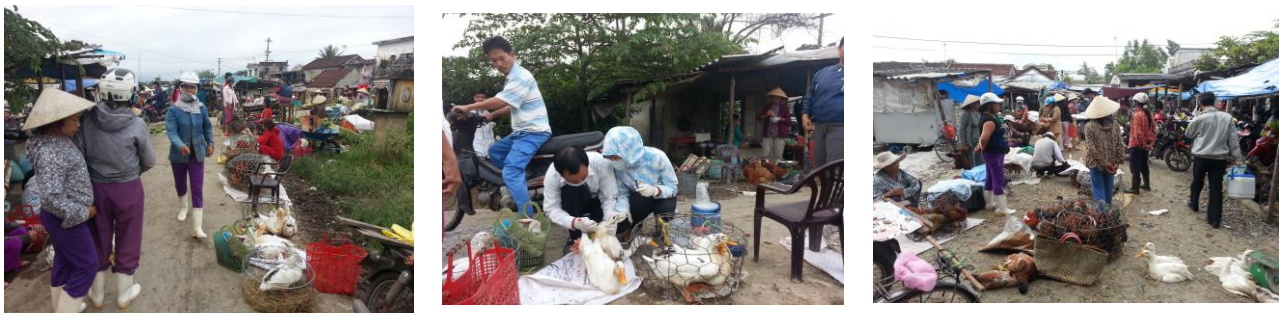
Location of 6 LBMs for samples collection

Meeting with all staffs of Hue Sub-Department of Animal Health

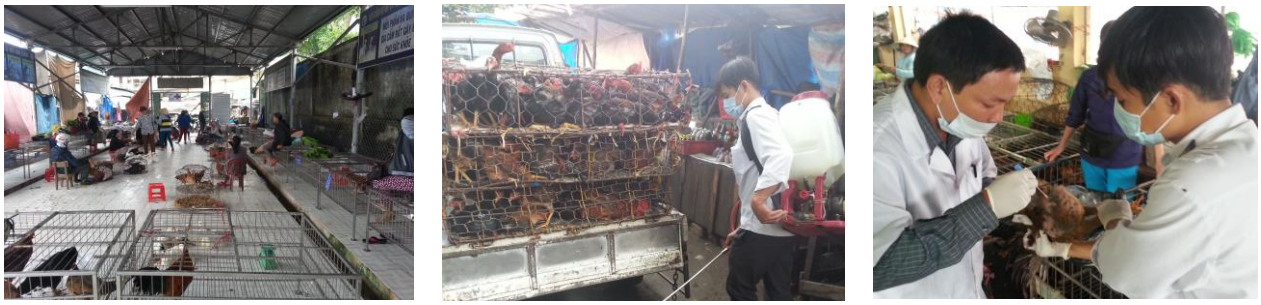
Activity 2: Collecting swab samples from poultry at LBMs and how to manage sample in the field

From the 2nd to 5th December, we carried out sample collection at 6 LBMs according to schedule of program. At the end of each day, all samples from 6 LBMs will be gathered in Hue-SDAH for checking the quality of samples and labeling again before moving to 4°C. Totally, 660 swab samples were collected at 3 LBMs with biosecurity: No, Thuy Phuong, An Lo and other 3 LBMs without biosecurity are Tay Ba, Phu Bai and Vinh Thanh:

- Chickens: 360 samples
- Ducks: 180 samples
- Muscovy ducks: 12 samples
- Environment: 48 samples
- Extra samples: 60 samples



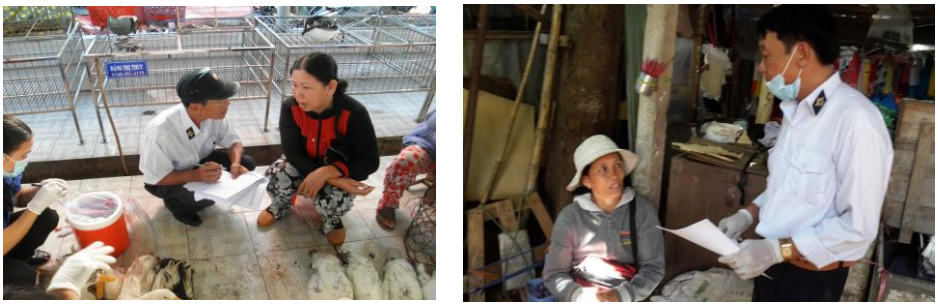
LBM without biosecurity



LBM with biosecurity

Activity 3: Investigating the knowledge, attitude and practices (KAP) of sellers at LBMs using questionnaire form for risk assessment

At the same time with sample collection (from 2nd to 5th December), a survey on KAP was be undertaken at all LBMs to assess hygiene practices, regulation and knowledge about AI for sellers using questionnaires. There are 47 questions in one set for 10 sellers per LBMs. Totally, we conducted 60 questionnaire forms in 6 LBMs. All information from questionnaire will be collected for multivariable analyses using R software to identify the risk factor in LBMs with and without biosecurity application. (R is a free software environment for statistical computing and graphics. It was developed at Bell Laboratories by John Chambers and colleagues, http://www.r-project.org/) to identify the risk factors.

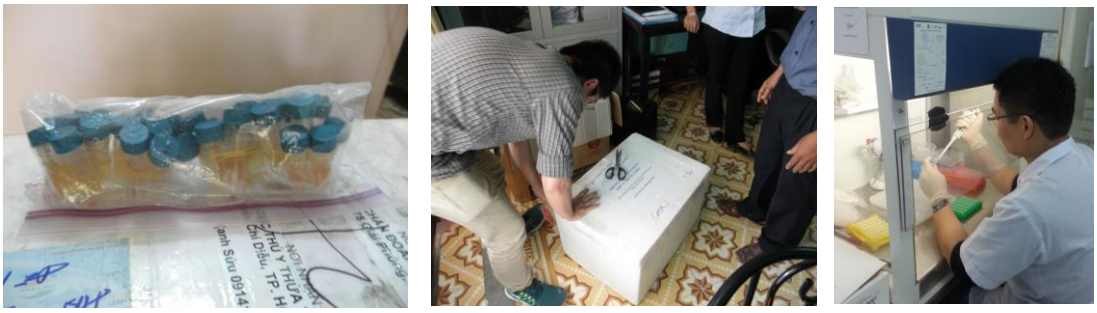


Survey of KAP using questionnaire form

Activity 4: Screening test for all collected samples at National Center for Veterinary Diagnostics (NCVD) in Hanoi, Vietnam

Totally, 660 of samples were collected at 6 LBMs and transfer to the laboratory of NCVD in two times, on 3rd December and 6th December. At NCVD, each 10-sample was set in one pool sample according to species and type

of samples in each LBM for screening test using Real-time RT-PCR. The results of screening test indicated that the positive rate of influenza A virus is 35.1% in total 77 pooled samples. (Data was shown in Table 1)



Preparation of sample shipment to NCVD and conducting screening test at NCVD

Table 1. Results of screening test at 6 LBMs

Market	With biosecurity			Without biosecurity		
	Negative	Positive	Total	Negative	Positive	Total
An Lỗ	8	4	12			
Chợ Nọ	2	11	13			
Phú Bài				7	5	12
Tây Ba				13	1	14
Thủy Phương	7	5	12			
Vinh Thanh				13	1	14
Grand Total	**17**	**20**	**37**	**33**	**7**	**40**
% Positive	**54.1**			**17.5**		

V. Conclusions

I finished successfully my Oversea Practice on Field Epidemiology in Vietnam within 15 days. I spent one week in the field with staff of Hue-SDAH for sample collection and investigated the hygiene status and attitude of sellers at LBMs for minimizing the risk of AI transmission. In the final week, I moved to Hanoi to conducted screening test of all samples at NCVD and prepared the negotiation of sample shipment to Hokkaido University for further study.

Based on the results of screening test I found that the positive rate with influenza A virus at market with biosecurity is higher than non biosecurity market even biosecurity markets were supported good facilities. This point indicated that attitude of sellers or market manager and their practice on the improvement of hygiene status is the most important for minimizing the AI transmission from LBMs to outside.

To identify the factor contributing to the high positive with influenza A virus at biosecurity markets, I am building up the data from information of questionnaire form and performing data analysis using epidemiology tools in the near future.

VI. Annex

Schedule of Oversea Practice on Field Epidemiology

29th November: Departure for Hanoi city, Vietnam

30th November: Arrive in Hue city, Vietnam

From 30th November to 6th December: carry out of sample collection at live bird markets around Hue city (stay at hotel)

1st December:

- Discussion with leaders of Hue Sub-Department of Animal Health for the implement of sample collection at live bird markets around Hue city.
- Preparation of equipments, materials and establishing collection teams for the samples collection at 6 live bird markets around Hue city.

2nd December to 5th December:

- Implement of sample collection following the fixed schedule by discussion with local authority.
- Conducting questionnaire for all sellers at 6 live bird markets.
- In the end of 5th December, preparation of sending all samples to National Center for Veterinary Diagnostics (NCVD) for screening test.
- Leaving Hue city for Hanoi city in 5th December.

From 5th December to 12th December: working at NCVD (Stay at with family)

- Reporting the results of activities in the field to leaders of Vietnam Department of Animal Health and NCVD.
- Working with staffs of NCVD for the screening test of all collected samples.
- Negotiation for sample shipment to Japan.

13rd December:

End of mission within 15 days, leaving Vietnam for Japan

14th December:

In Sapporo, Hokkaido

（Field Epidemiology・Collaborative Research）Evaluation by supervisor

Institution・Official title・Name	Laboratory of Microbiology 印 Prof. Yoshihiro Sakoda
Describe overall evaluation on the applicant's activity in overseas practice.	

※1 Send the electronic file to the Leading School section, International Affairs Office, also submit the original print out with seal of supervisor to the Leading School section, International Affairs Office.
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