

(Abroad • Domestic) Official trip report form (Student)

2015/12/20 (Year/Month/Day)

Name	Duc-Huy Chu
Laboratory	Microbiology
Year (Grade)	DC 3
Destination	<ul style="list-style-type: none"> <li>- Vietnam Department of Animal Health (DAH), Hanoi, Vietnam</li> <li>- National Center for Veterinary Diagnostic (NCVD), Hanoi, Vietnam</li> <li>- Sub-Department of Animal Health (Sub-DAH) of Vinh Long province and Regional Animal Health Office no. 7 (RAHO7), Can Tho, Vietnam</li> <li>- Sub-DAH of ThuaThien Hue province, Hue city, Vietnam</li> </ul>
Period of trip	21 days, from 1 <sup>st</sup> November to 21 <sup>st</sup> November, 2015
Purpose of trip	<ol style="list-style-type: none"> <li>1. Carrying out the 3<sup>rd</sup> round of sample collection in live bird markets in Hue city, Thua Thien Hue province, Vietnam.</li> <li>2. Discussion on the results of AI surveillance conducted in the South part (Vinh Long province) of Vietnam in August 2015 with DAH, Sub-DAH of Vinh Long province.</li> <li>3. Epidemiological analysis in DAH</li> </ol>

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

## I. Background

From September 2014, our laboratory has conducted the avian influenza (AI) surveillance program in Vietnam. In order to minimize the risk of AI transmission, we selected Hue city located in the Central part of Vietnam as a study site for a research of evaluation on hygiene status in live bird markets (LBMs) with and without intervention in Vietnam. This research is mainly contributing to my PhD course in Hokkaido University. Currently, we conducted 2 rounds of AI surveillance program in Hue city. We found that there is no difference of AI positive rate between LBMs with intervention (6.2%) and LBMs without intervention (5.6%) in Hue city. In November 2015, we conducted the 3<sup>rd</sup> round of AI surveillance program as a final round in Hue city to clearly point out some factors for AI viruses circulating in LBMs with intervention. In this time, we will focus on environmental samples in LBMs and knowledge, attitude, practice survey for sellers with more specific questions regarding to the sources of poultry or poultry movement within Thua Thien Hue province. Epidemiology data analysis also was implemented.

In August 2015, our laboratory also carried out AI surveillance in Vinh Long city located in the South part of Vietnam under the research project of Nguyen Thanh Lam (D1, Lab of Microbiology). Taking together with this Vietnam trip, we had a meeting with leaders of Vinh Long Sub-DAH for discussing on preliminary results of virus isolation in their LBMs that conducted in August as a quick response from the OIE reference laboratory for animal influenza. And we shared these results with RAHO7 in Can Tho nearby Vinh Long province to evaluate their method for the AI diagnostic.

## II. Aims

1. Discussion on the results of AI surveillance conducted in the South part (Vinh Long province) of Vietnam in

August 2015 with DAH, Sub-DAH of Vinh Long province.

2. Carrying out the 3<sup>rd</sup> round of sample collection in live bird markets in Hue city, Thua Thien Hue province, Vietnam.

3. Epidemiological analysis in DAH for the identification of risk factors contributing to AI virus circulating in LBMs

### III. Results

#### 1. Discussion on the results of AI surveillance conducted in the South part (Vinh Long province) of Vietnam in August 2015 with DAH, Sub-DAH of Vinh Long province.

For the 1<sup>st</sup> duty (2<sup>nd</sup>-3<sup>rd</sup> November), we went to the south part Vietnam. We had a discussion with DAH, RAHO7 and Sub-DAH of Vinh Long province for reporting the result of virus isolation in LBMs in Vinh Long province (Fig.1). In this meeting, we informed the number of virus isolates (245 isolates/710 samples) as well as H5N1 viruses was detected in environmental samples and in the seller's hand swab samples. We discussed on the results and concluded that there is no difference positive rate with AI viruses in both types of LBMs with intervention. In order to solve this problem, we decided that we should consider to the improvement of hygiene status in LBMs by intensive disinfection using new standard protocol and the quality of equipment or materials for disinfection. We also find the way to solve the problems that remained during the time of sample collection in the field such as a good schedule for the duty arrangement of each stakeholder, lack of materials in the field and etc.



**Fig.1. Discussion in Sub-DAH Vinh Long office, Vinh Long province, Vietnam**

#### 2. Carrying out the 3<sup>rd</sup> round of sample collection in live bird markets in Hue city, ThuaThien Hue province, Vietnam.

For the 2<sup>nd</sup> duty (6<sup>th</sup>-12<sup>th</sup> November), we moved to the center part of Vietnam for the sample collection. There are some differences in this sample collection need to notice to collector teams; I added more types of environmental samples for more precise in evaluation of improvement of hygiene status in LBMs of intervention. Totally, 9 types of environmental samples were listed in this time. For examples, feces on floor, feces on surface cage, feed water in tray, wasted water in drain, hand seller, surface of balance, displumed machine, slaughter water in pot and wasted feather. Therefore, I had to conduct the short training course on sample collection to explain in detail for all staffs of Sub DAH Thua Thien Hue (Fig.2).



**Fig.2. Short training course on sample collection in ThuaThien Hue, Vietnam**

A 2040 swab samples from poultry and environmental samples was collected. There are more 3 types of environmental samples such as “Hand of slaughter worker, cutting board and hand of seller contacting with raw poultry meat” were added in the list for more collection; because of the infrastructures in each LBM are different, we could not apply the same sample size for all LBMs. To save my time, I made the schedule to finish screening test for all samples in Vietnam in 2 weeks before sending to Japan. Finally, the results of influenza A virus detection (M gene detection by RT-PCR) indicated that 42.4% for LBMs with intervention and 45.7 % for LBM without intervention.

During the time of sampling collection (Fig.3), we also interviewed sellers in LBMs to collect information related to their knowledge and behavior for epidemiology study. Totally, 58 questionnaire sheets were collected with 50 individual questions for each sheet. This data will be used for multilevel analysis using R software for identification of risk factors in LBMs.



**Fig.3. Sample collection in LBMs**

### **3. Epidemiological analysis in DAH for the identification of risk factors contributing to AI virus circulating in LBMs**

From 16<sup>th</sup> -20<sup>th</sup> November, I went back to Hanoi (northern part of Vietnam) after finishing sample collection in Thua Thien Hue province. Here, I worked closely with DAH staffs to establish data for analysis using R software. A temporal multilevel analysis model already runs well in 5 steps;

Step 1: Trimming and code of data

Step 2: Check the correlation/relationship between risk factors

Step 3: Check the correlation/relationship between risk factors and output (1.0)

Step 4: Binary variables analyze to select and screening risk variables for multivariable analysis

Step 5: Multivariable analysis

However, my KAP data need to clean up more and re arrangement. I will fix it when I am in Hokkaido.

#### IV. Conclusions

I finished successfully my business trip in Vietnam within 3 week. During this trip we already obtained good discussions with central level, DAH and local level, Sub-DAH Vinh Long and Sub-DAH Thua Thien Hue.

For Sub-DAH Vinh Long (southern part of Vietnam), we will set up a new protocol for disinfection procedure.

For Sub-DAH Thua Thien Hue (central part of Vietnam), we finished AI surveillance program. Next step, I just analyze the KAP data including animal movement data for the identification of risk factors contributing to the AI prevalence in LBMs with intervention.

Approval of supervisor	Institution • Official title • Name : Department of Disease Control, Laboratory of Microbiology Prof. Yoshihiro Sakoda 印
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※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.

Submit to : Leading School section, International Affairs Office

Ext: 9545 e-mail: [leading@vetmed.hokudai.ac.jp](mailto:leading@vetmed.hokudai.ac.jp)

## V. Annex

### Schedule of official trip

Day		Time	Main activities	Flight	Hotel
1-Nov	Sunday	11:30	Departure from Sapporo-Chitose-Japan	NH0058	
		13:10	Arrival in Haneda-Japan		
		16:35	Departure from Haneda	VN0385	
		20:50	Arrival in Hanoi		
		23:00	Check in hotel		Hanoi city
2-Nov	Monday	13:30	Departure for Can Tho city	VN1203	Can Tho city
3-Nov	Tuesday		Meeting with Sub-DAH of Vinh Long		Vinh Long province
4-Nov	Wednesday	10:25	Go back to Hanoi	VN1200	Hanoi city
5-Nov	Thursday		Visit NCVD in Hanoi		Hanoi city
6-Nov	Friday	9:00	Departure for Hue city	VN1541	Hue city
		PM	Meeting with leader teams of Hue Sub-DAH, distribution of equipments		
7-Nov	Saturday		Sampling day 1		Hue city
8-Nov	Sunday		Sampling day 2		Hue city
9-Nov	Monday		Sampling day 3		Hue city
10-Nov	Tuesday		Sampling day 4		Hue city
11-Nov	Wednesday		Sampling day 5		Hue city
12-Nov	Thursday		Sampling day 6		Hue city
13-Nov	Friday	10:50	Leave for Hanoi	VN1540	Stay with family
14-Nov	Saturday		Day off		Stay with family
15-Nov	Sunday		Day off		Stay with family
16-Nov	Monday		Work with NCVD		Stay with family
17-Nov	Tuesday		Multilevel analysis in DAH		Stay with family
18-Nov	Wednesday		Multilevel analysis in DAH		Stay with family
19-Nov	Thursday		Multilevel analysis in DAH		Stay with family
20-Nov	Friday		Multilevel analysis in DAH		Stay with family
21-Nov	Saturday	8:20	Flight to Haneda, Tokyo, Japan	VN0384	
		18:00	Sapporo from Haneda	NH0075	In Sapporo