北海道大学
One Health フロンティア卓越大学院プログラム
One Health Allyコース
Student Free Design Activities報告書

Hokkaido University
WISE Program for
"One Health Frontier Graduate School of Excellence"
One Health Ally Course
Student Free Design Activities Report form

Student Free Design Activities (One Health on-site Training)
報告書 Report

報告者 [Reporter]

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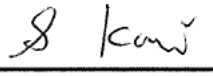
署名 [Signature]			
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活動報告 [Activity Report]
※活動内容が判る様な写真や図表を加えて下さい。/ Provide photos, tables and figures that clearly show the activities during the period.

タイトル [Course Title]	Molecular epidemiological surveillance of blood-borne pathogen in Nakhon Pathom province, Thailand
実施期間 [Periods]	2024/4/22 – 05/17
共同実施者 [Other participants]	Sonthaya Tiawsirisup (Faculty of Veterinary Sciences, Chulalongkorn University, Thailand)
言語 [Language]	Thai, English
実施場所 [Location]	Nakhon Pathom campus and Bangkok campus, Faculty of Veterinary Sciences, Chulalongkorn University, Thailand

申請時計画の実施報告 [Report how you carried out your plan in the application form]

Did you follow the schedule you initially planned? Did you get the outcome(s) you expected? Please describe what you did during the activity period in detail.

I could partially follow the initially planned with the blood collection during April 28th to May 2nd, additionally with the area around Bangkok. The additional area including Saraburi, Kanchanaburi, and Ratchaburi province. The major reason of this modification is schedule of activities that was change for the specific situation at that time. So, we designed to visit the dairy cattle farm directly without involving in the volunteer activity that held by Chulalongkorn University for 6th-grade undergraduate veterinary students. However, after finishing the blood collection, I still brought the samples to the Laboratory of Parasitology unit in Bangkok and conduct the experiments until I came back to Sapporo.

For the detail of activities, I will describe as major topics below.

<u>Preparation of equipment and place</u>
Just after the arrival in Suvarnabhumi airport, Bangkok, Thailand, I manage the custom clearance with DHL, logistic company which we use for shipping. Then, all of parcel arrived at the Parasitology unit, Chulalongkorn University, I managed the equipment and space that I use for the continuing experiments.

Field activities

Due to the modification of activities plan from the beginning, I had chance to collect many samples from 4 provinces listed above, not only Nakhon Pathom province. Five-hundred-sixty-five of cattle blood samples were collected from 44 farms that assisted contacted by Kasetsart University's veterinary staffs. The blood collection activity continuously conducted from April 28th to May 2nd, from early morning to evening and then brought back to the Chulalongkorn University's campus dormitory in Nakhon Pathom province. After samples collection every day, I stored the fresh blood sample in the refrigerator at 4 degrees Celsius. Then, every other day, I brought back the blood samples from Nakhon Pathom campus to Bangkok campus of Chulalongkorn university to store in the refrigerator of Parasitology unit.

Figure 1 Blood collection from the tail vein of dairy cattle

Experiment activities

The enzyme-linked immunosorbent assay (ELISA) tests of bovine leukemia virus (BLV) and *M. avium* subsp. *paratuberculosis* were detected following the manufacture, by using plasma from EDTA-treated blood samples. The results were analyzed as positive and negative for seroprevalence analysis in Parasitology Unit, Faculty of Veterinary Sciences, Chulalongkorn University, Thailand. Molecular epidemiology of blood-borne pathogens of dairy cattle, including BLV, *Anaplasma* spp., *Babesia* spp., *Theileria* spp., and *Trypanosoma* spp. will be also conducted using DNA samples extracted from whole blood.

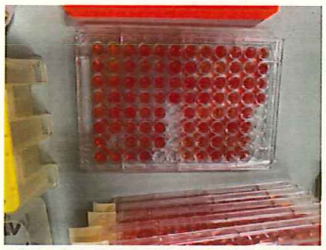

Figure 2 Plasma separation for ELISA assays

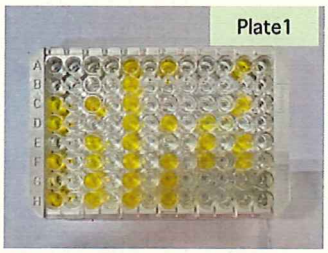

Figure 3 Example of ELISA assay result's appearance

目的達成状況報告 [Report how you achieved your goal/objectives listed in the application form]

Did you achieve all the goals you initially planned? If not, please describe why you failed to fulfill your objectives.

I could achieve the goals I initially planned with the molecular epidemiology and seroprevalence surveillance of blood-borne pathogen in Nakhon Pathom province, Thailand. Even I have to postpone my schedule later than original date for 1 week, fortunately, I successfully finished the ELISA diagnosis of 2 diseases, including BLV and *M. avium* subsp. *paratuberculosis*. Moreover, I finished extraction of DNA from all of blood samples. However, the epidemiology of various blood-borne pathogens is needed to continue. So, I planned to periodically conduct this experiment together with my main research topic.

One Health Approach実践報告 [Report how your activity could link to One Health Approach]

Did you have a chance to experience One Health approach (collaboration with people from other academic areas)? Please describe some of the examples of One Health approach you implemented in your activity. Otherwise, explain the possibility(ies) how you could link this activity to One Health approach for your future.

Since I worked in the research field, even I finished undergraduate degree with degree of veterinary medicine (DVM). I never worked and had a close relationship with farmer in the real situation. From this activity, I had chance to visit the farmers with veterinarians that taking care of them. I could ask them in-detailed about the problems that they worried about, and how they tried to solve it. Moreover, the important things to approach the farmer is the helps from field veterinarians, because every farmer trust only the one who take care of them. So, they willing to provide information and samples only for related veterinarian. This valuable experience and information would be used for my further experiment of this activity, and guideline for other field activities management in the future.

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備考 [Remarks]

※ 報告書を作成後、担当教員に確認をお願いし署名をもらってください。PDFファイルとしてVetlogから提出してください。
提出先：「Student Free Design Activities報告書」

※ Please ask your instructor to check this report and get his/her signature. The scanned report is to be submitted through Vetlog「Student Free Design Activities Report」.