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Year (Grade)	D3
Internship institution	One Health Collaborating Center, Universitas Gadjah Mada (OHCC-UGM), Yogyakarta, Indonesia
Internship period	01/28/2019 - 02/19/2019
Purpose	molecular identification of <i>Trypanosoma evansi</i> in Indonesia

## Report of abroad internship in Indonesia

### 1. Introduction

*Trypanosoma evansi* is a blood protozoan parasite which causes surra disease in livestock. Surra has brought great losses to many countries especially in agriculture sector. However, in Indonesia, surra is still considered as neglected disease and there is still lack information about it. Hence, we aimed to molecular identification for the epidemiology study of *T. evansi* in Indonesia.

### 2. Purpose

There were basically three points of purpose that I wanted to achieve through this program:

- Conducting a study on molecular identification of *Trypanosoma evansi* in Indonesia
- Fostering my professional qualifications to add the value of my PhD study
- Establishing collaboration with OHCC and *T. evansi* expert in the country.

### 3. Activities

- Conducting a study on molecular identification of *Trypanosoma evansi* in Indonesia.  
After doing surveillance in Kulonprogo and sample transfer in BBvet Wates, I extracted all the samples n=446 from cattle and buffalo blood. Then, I have conducted molecular detection for *T. evansi* by PCR targeting ITS1 region for the trypanozoon general screening, RoTat1.2 gene for *T. evansi* type A screening, ATP-F1 gene for *T. evansi* type B screening, ESAG6 gene for genetic diversity investigation, and 18S gene for the other pathogen screening. The positive samples were randomly subjected for MinION sequencing to obtain the data. Since the project worked well, my host supervisor was very happy and willing to continue the collaboration for the next opportunity.

Fig1. DNA extraction for blood samples, n=446

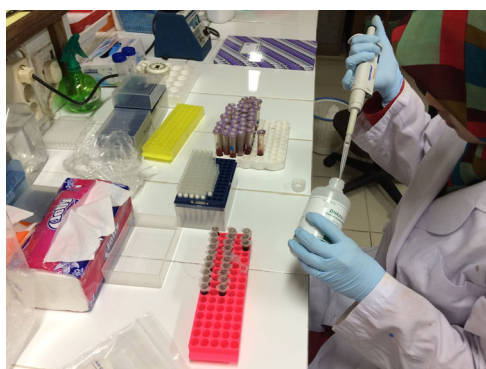


Fig2. DNA amplification by PCR for molecular detection of *T. evansi*

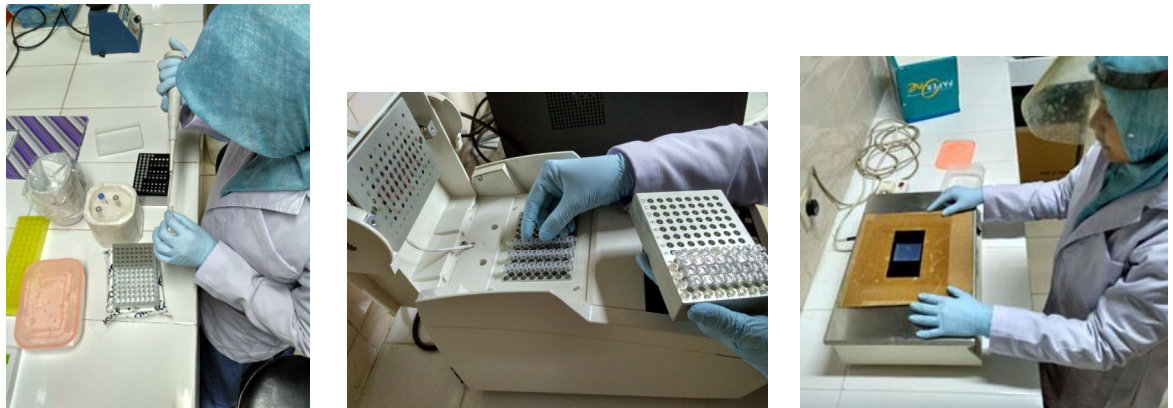


Fig3. Application of MinION sequencing



- b) Fostering my professional qualifications to add the value of my PhD study  
This activity has broadened my knowledge on *T. evansi* research which is beneficial for my PhD study. I got a bonus activity to learn about the field diagnosis system for the parasites from the expert and researchers in Disease Investigation Center BBVet Wates, Yogyakarta. I got a chance to practice the haematocrite test, blood smear test, and the application of card agglutination test for *Trypanosoma evansi*. I attended the general lecture of Prof. Ursula from Heidelberg University, Germany about trypanosoma and malaria control.

Fig4. Training on application of haematocrite test for surra diagnosis



Fig5. Training on application of card agglutination test of *T. evansi* (CATT) for surra diagnosis

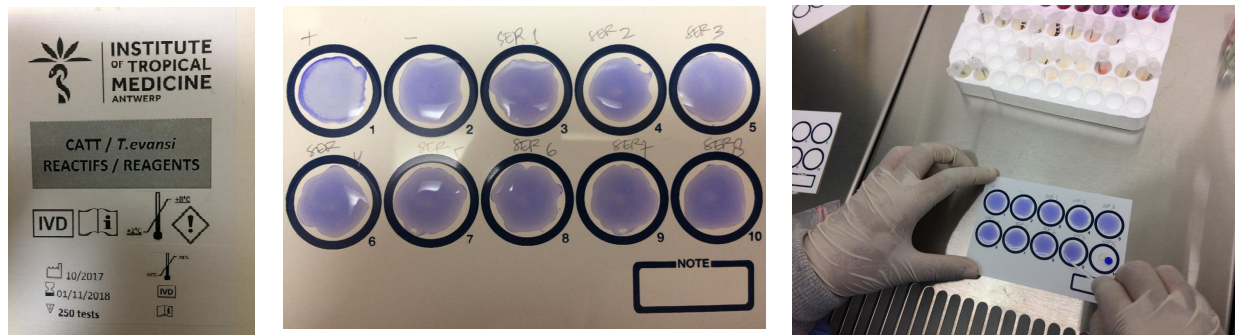


Fig6. Attending general lecture of Prof. Ursula from Heidelberg University, Germany



- c) Establishing collaboration with OHCC and *T. evansi* expert in the country.  
I attended the One Health Forum in Graduate school of Gadjah Mada University. It is a program where the local expert, researcher, graduate students are gathering together to have discussion and to make initiative for the better one health establishment in regional and national in order to achieve the control measurement for zoonosis in Indonesia. Here, I met a lot of people and connected with them. I think that my current position as PhD student in Hokkaido University benefit me since this university has a big name in my country. So, I found that it was easy to talk and to create the bond in science with them.

Fig7. Attending One Health Forum



d) Other activities

I am grateful to have a chance to talk with the faculty and university officials about the Gadjah Mada University. They teach me about the requirement and tips how to apply as teacher there. This information is very valuable for me. I hope this can guide me to decide my job after graduating PhD.

#### 4. Conclusions

I cherish the experience since it has taught me a lot to improve my skill, my knowledge, and foremost my PhD quality. This program gave me a chance to share and exchange information about unique program of our own institution, UGM and Hokkaido University. I had to get familiar with the nature of institution and learn about the working culture which will be useful for my future. This activity also opened the opportunity for me to have an interaction for future collaboration regarding to my research on *T. evansi* epidemiology.

Approval of supervisor	Institution • Official title • Name Junya Yamagishi. Associate Proffessor. Center for Zoonosis Control.
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※1 Send the electronic file to the Leading School section, International Affairs Office

※2 Attach a copy certificate of the content of internship activity that is prepared by the counterpart at the internship institution (any form with a signature of the counterpart).

※3 The Steering Committee of the Leading Program will first confirm the content of this report and report will be forwarded to the Educational Affairs Committee for credits evaluation.

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