

**Mini Training Report**  
**IMPROVING CAPACITY BUILDING OF FOREST PEST AND DISEASE EXPERTS IN**  
**SOUTH EAST ASIA REGION**  
**Hanoi, September, 24 – 29, 2018**

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Non-native fast-growing forest tree species plantations have expanded rapidly in the South East Asia (SEA). Longer rotations have been accompanied by the emergence of new pests, diseases and new host-pest combinations that has never been seen before. New pest and disease problems have also emerged in areas that were previously free from such pests and diseases. Since the pest and diseases in planted forest of SEA countries are increasing both in number and severity, cooperation and collaboration between researchers and managers among the SEA countries is essential to mitigate the impacts of pest and disease. However, the number and expertise level of forest pathologists in SEA is limited. Thus this mini training aims to improve the capability SEA pathologist expert through capacity building and forming an informal group of SEA pest and disease experts.

Department of Forest pathology Vietnamese Academy of Forest Sciences (VAFS), Hanoi, Vietnam was chosen as the host of training. This institution have many expert on forests pathology with advance capability in order to update the technique on forest pathology among the participants. In addition, whether they don't have very high-tech equipment and tools, however they already have complete facility for conducting standard assessment on forestry's pathogen.

Professor Pham Quang Thu, Vietnamese forest pathologist, together with his team in VAFS was the instructor during this mini training. There were 15 participants from Thailand, Malaysia, Indonesia and Vietnam i.e. 3, 4, 6 and 2 participants respectively. The mini training was financially support by international sponsors (APAFRI and FAO).



Figure 1. Gallery of group photo during the training

The activities of the training were consisting of field identification and collection of *Pythophtora* and *Ceratocystis*, also recognize their sign and symptom. First, *Pythophtora* fungus collection were conducted at the river inside Tram Kiem Lam Mui Xe National Park, Sapa (approximately 800 km from Hanoi), while *Ceratocystis* fungus sample were collected from Acacia plantations belongs to local community near the highway in Lao Cai Region, Vietnam (Figure 2 and 3).



Figure 2. a and b. Tracking inside National Park to the river, c. collecting leaf sample infected by *Pythophtora* fungus, d. discuss the sample finding at the National Park of Tram Kiem Lam Mui Xe, SAPA



Figure 3. a. Collecting Acacia trees sample infected by *Ceratocystis* fungus, then b. discussing in the field belong to local community near the highway in Lao Cai Region, Vietnam

After back to the Vietnamese Academy of Forest Sciences (VAFS) in Hanoi, all the participants tried to assess and process the sample that previously collected in the field. First, they tried to isolate *Pythoptora* and *Ceratocystis* using water-baiting and carrot-baiting techniques and later made a pure culture from those fungus. The VAFS teams also introduce various baiting and isolations techniques for different type of fungus i.e *Calonectria* into the artificial media in the following day. Furthermore, the participants also learnt about DNA extraction at the Laboratory.



Figure 4. Some activities in the Laboratories including identification, baiting and isolation of *Pythoptora*, *Ceratocystis* and *Calonectria* fungus also demonstrated of *Ceratocystis* DNA extraction



Figure 5. In class lecture, in depth discussion and presentation



Figure 6. Happy gathering for lunch time everyday

During the final session and closing of the mini training, all the participants committed to develop further collaboration on research and information exchange in the field of forests pests and diseases managements in the tropics. The next training is planned to be held in Thailand or Indonesia. Hopefully in the future we can get funding from many international donor agencies in order to facilitate the training, accommodation and other expenses.

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