

## **CAPACITY DEVELOPMENT PROGRAMS BY THE TRANSBOUNDARY ANIMAL DISEASE MITIGATION TEAM IN SOUTH EAST ASIA**

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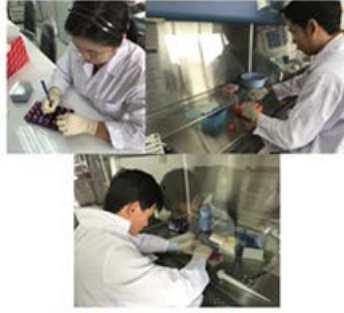
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Foot-and-mouth disease (FMD) is a major disease of livestock impacting the livelihoods of people in South East Asia. The social impacts of the disease are also significant. CSIRO's scientists from the Australian Animal Health Laboratory (AAHL) are helping several countries in the region to improve their diagnostic capabilities and research into FMD, which in turn helps us better understand the FMD virus strains circulating in the region. In collaboration with several national laboratories and the World Organisation for Animal Health (OIE) Regional Reference Laboratory (OIE-RRL) for FMD in South East Asia (SEA) located in Thailand, the project serves to improve preparedness through processing infected samples, and performing molecular, cell culture and serum antibody assays to detect and characterize FMD viruses. As an outbreak of the disease in Australia would cost our livestock industries billions of dollars, primarily due to restrictions on the exports of animals and animal products, this collaboration is important to ensure that if an FMD outbreak should occur, it can be effectively controlled and contained and its impact on Australia's livestock industries minimised.

Since 2011, work has been carried out in Vietnam, Lao PDR, Myanmar and Thailand to improve their existing diagnostic methods and analysis of genetic sequences. The project has also heavily invested in studies which compare the characteristics of circulating viruses in these countries with the vaccine strains available in the Australian Vaccine Bank. The project works in close collaboration with the OIE-RRL in Thailand to generate data on vaccine strain matching studies and also assisting in analysis of sequences.

In addition, we are working in collaboration with the FMD control program initiatives by the Ministry of Primary Industries and Massey University, New Zealand in Lao PDR and Myanmar. CSIRO scientists, with co-operation from the OIE-SEACFMD campaign, have made several missions to the national laboratories of these countries and assisted in capacity building in areas of serology (including post vaccine monitoring) and in virus detection methods (including virus isolation).

The National Animal Health Laboratory (NAHL) in the capital Vientiane is the key laboratory for FMD diagnosis and confirmation in the Lao People's Democratic Republic (PDR). The laboratory has a strong team of staff that perform antigen and antibody tests on FMD viruses. However, the laboratory lacked the ability to perform FMD virus genome detection based on molecular methods. To address this need, a training program was organized 1–8 March 2017 on FMD genome detection using real-time reverse transcription polymerase chain reaction (qRT-PCR). We are grateful to the OIE-SEACFMD campaign who supplied the reagents for this training.



**NAHL, Vientiane**

Workshops were also conducted at the new Biosecurity Level (BSL) 2 FMD Diagnostic laboratory facility in Nay Pyi Taw, Myanmar, with OIE-SEACFMD assistance, to train newly recruited scientists in the use of techniques for FMD antigen detection (20 Feb – 3 Mar, 2017) and post-vaccine monitoring (13 – 23, Aug 2017). Assistance was provided in the form of standard operating procedures and standard testing protocols, reagents and continued technical support towards self-sufficiency in these laboratory methods. A 1-2 year plan of development for laboratory staff and operations was also supported, including identification of staff for further training in FMD diagnostics and serology. Antigen and antibody tests on FMD viruses have now become routine tests in these laboratories. The AAHL team will continue in its commitment towards reducing the burden of FMD in SEA.



**National Laboratory for FMD,  
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