

OIE Reference Laboratory in China supports capacity building for rabies diagnostics in the Philippines

The OIE Regional Representation for Asia and the Pacific, in association with the OIE Reference Laboratory for Rabies at Changchun Veterinary Research Institute (CVRI), China, organised a hands-on laboratory training course for rabies diagnostics at the Bureau of Animal Industry (BAI) in Quezon City, the Philippines, in July 2019. Six months later, the trained staff continue to improve their own laboratory procedures and provide greater capacity for rabies diagnostics in the country.



From 1st to 5th July 2019, participants from the Animal Disease Diagnosis and Reference Laboratory (ADDRL) and Regional Animal Disease Diagnostic Laboratories (RADDLs) in the Philippines undertook training by experts from the **OIE Reference Laboratory for Rabies** at Changchun Veterinary Research Institute (CVRI) in China. Dr Changchun Tu led the training which was held at the Bureau of Animal Industry (BAI) in Quezon City, the Philippines.

Dr Ronnie D Domingo, Director of BAI, opened the training which began with a half-day background **seminar** on rabies, attended by 35 participants. Then, Dr Tu and Dr Feng Ye from CVRI led the **hands-on laboratory training** for seven laboratory personnel during the rest of the week. This covered various sampling (e.g. using the straw method to take brain samples) and diagnostic methods. Participants practiced techniques including molecular tests (RT-nPCR and qPCR) and ELISA. Dr Tu reviewed the performance of the direct fluorescent antibody test (dFAT) that ADDRL routinely uses and gave invaluable advice on optimisation of laboratory protocols to process samples for rabies diagnosis and gave guidance on future steps.



Hands-on laboratory training by Dr Changchun Tu

Since the training in mid-2019, there have been several improvements made in rabies diagnostics within the Philippines. A collaboration with the OIE Reference Laboratory at CVRI on **rabies molecular epidemiology in the Philippines** has been initiated. Besides the national laboratory (ADDRL at BAI), regional laboratories are also collecting dFAT-positive brain samples. Genome sequencing of rabies virus (RABV) from samples has been conducted and data submitted to GenBank. It is the experts' opinion that the Philippine RABVs are genetically distinct, forming an independent branch in the phylogenetic tree of rabies viruses in Asia.

After review of the ADDRL's existing methods by the trainers in July, improvements have been incorporated into **updated versions of rabies SOPs in the laboratory**, with a harmonised protocol for the dFAT for adoption by all laboratories (after a year-end planning workshop in November 2019). There is continued contact with the CVRI and an improved protocol for qPCR has been shared with laboratories in the Philippines. Optimisation of the protocol will be conducted as soon as possible. Following the training, consumables have been procured and **equipment upgrades** have been added to the facilities. Additionally, laboratory buildings will be constructed for storage and funding requests to further expand are ongoing. To transfer the benefits of this training, an additional **two personnel from a regional laboratory were trained** by BAI personnel in August 2019. Inter-laboratory comparison testing will be conducted in the Philippines and the ADDRL facility will participate in an international **proficiency testing(PT)** in 2020.



Downstream training at BAI for RADDL-CAR, Aug 2019

Despite challenges encountered by the laboratories, including the need to combat other emerging diseases, the awareness and **capacity of the national and regional laboratories** in the Philippines to routinely conduct laboratory diagnoses as a necessary part of animal rabies surveillance in the country has been significantly increased following this OIE training.



Year-end planning workshop for BAI-ADDRL and DA-RADDLs, Nov 2019