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NVSL Foreign Animal Disease Diagnostic Laboratory

Last Modified:

The Foreign Animal Disease Diagnostic Laboratory (FADDL) is one of four National Veterinary Services Laboratories (NVSL) for APHIS. Together, these laboratories provide critical support to the U.S. animal health system—more specifically, the animal agricultural sector—through the testing and diagnosis of a variety of infectious diseases.

Currently, FADDL is located at the Plum Island Animal Disease Center (PIADC) in New York, the National Bio and Agro-Defense Facility (NBAF) in Kansas, and the Puerto Rico Department of Agriculture. FADDL's work at Plum Island is moving to NBAF.

What We Do

Scientists at the FADDL are devoted to diagnosing foreign diseases of animals and partner with scientists of the U.S. Department of Homeland Security and the USDA's Agricultural Research Service (also located at Plum Island and NBAF) in foreign animal disease research.

Additionally, the FADDL is the custodian of the North American Foot-and-Mouth Disease (FMD) Antigen Bank. The bank stores concentrated FMD antigen that can be formulated into vaccines if an FMD introduction occurs. The bank is co-owned by

Canada, Mexico, and the United States. Personnel working in the vaccine bank are responsible for performing safety and potency testing of new antigen lots of FMD vaccine and periodically testing the quality of stored antigen.

Organization

The FADDL is composed of four sections: the Diagnostic Services Section, Reagents and Vaccine Services Section, Scientific Liaison Services Section, and Proficiency and Validation Service Section.

Expand All

Diagnostic Services Section

Scientists in the Diagnostic Services Section have the capability to diagnose more than 30 exotic animal diseases (including FMD, classical swine fever, African swine fever, and other diseases listed by the World Organisation for Animal Health (WOAH), and they perform thousands of diagnostic tests each year, looking for the presence of FAD agents. Tissue and blood samples to be tested are submitted by veterinarians suspecting an exotic disease in domestic livestock or by animal import centers testing quarantined animals for foreign diseases. Samples also are submitted by animal health professionals in other countries who need help with a diagnosis. The FADDL is a Reference Laboratory for WOAHE and a Reference Centre for the Food and Agriculture Organization of the United Nations (FAO).

For more details on NVSL activities, visit About the NVSL.

Reagents and Vaccine Services Section

The Reagents and Vaccine Services Section provides diagnostic reagents, assays, vaccines and other services for identification, control, and eradication of foreign animal diseases. The section is responsible for production and quality testing of reagents used at FADDL in diagnostic assays and for the training and proficiency

testing program for the National Animal Health Laboratory Network. It also participates in safety and potency evaluations of potential vaccines against foreign animal diseases.

The FADDL provides training to State, Federal, and foreign officials in the clinical and laboratory diagnosis of foreign animal diseases.

Scientific Liaison Services Section

The Scientific Liaison Services Section (SLSS) is a newly created section that carries out a cross-cutting function by providing scientific and technical support to other FADDL sections. Its activities include development and validation of improved diagnostic tests, pathogen surveillance and discovery through application of state-of-the art metagenomics, and detection technologies through engagement in national and international collaboration. SLSS is also interested in the application of computational biology, bioinformatics, artificial intelligence, and machine learning approaches to infectious disease investigation, including pathogen discovery. The section is host to capabilities and state-of-the art sequencing technologies that provide support to the FADDL's Diagnostic Services Section and Reagents and Vaccine Services Section. Specifically, the SLSS engages laboratories in endemic countries in development and field validation of novel diagnostics, pathogen discovery, outbreak investigations, molecular epidemiology, and surveillance of emerging infectious diseases.

Proficiency and Validation Service Section

The Proficiency and Validation Service Section (PVSS) is a newly organized section within FADDL. Four functional teams in PVSS include the Proficiency team, Validation team, Import Export Domestic Transfer Safety (IEDTS) team, and Calibration team. The Proficiency team has an important mission to support National Animal Health Laboratory Network (NAHLN) laboratories via production of proficiency panels and controls for diagnosis of foreign animal diseases (FAD), as well as diagnostic proficiency tests for NAHLN laboratory personnel. The Validation team mission is to verify, validate, and research and develop FAD diagnostic tests for uses in internal

(FADDL Diagnostic Services Section) and external stakeholders such as NAHLN laboratories and international organizations. The IEDTS team functions as the liaison for risk analysis and coordination on FAD safety testing for animal-origin import and export materials. The Calibration team is in charge of calibration, maintenance, and repair of laboratory equipment, which is crucial for ISO accreditation and maintenance.

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