



United States  
Department of  
Agriculture

Animal and Plant Health Inspection Service

# National Veterinary Services Laboratories



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Plum Island

The mission of the National Veterinary Services Laboratories (NVSL), a unit within the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS), is to safeguard U.S. animal health and contribute to public health by providing timely and accurate diagnostic laboratory support directly or through a national laboratory system that includes the National Animal Health Laboratory Network (NAHLN).

The NAHLN is a partnership between USDA-APHIS, the USDA National Institute of Food and Agriculture (NIFA), and the American Association of Veterinary Laboratory Diagnosticians (AAVLD). The network consists of a group of State- and university-funded veterinary diagnostic laboratories that work with animal diseases, including those that are endemic, exotic, zoonotic, or emerging. NVSL coordinates NAHLN activities, participates in methods validation, and provides training, proficiency testing, assistance, materials, and protocols for diagnostic tests.

## Quality Diagnostic Services

At the very core of the NVSL mission is customer-based service as a veterinary diagnostic laboratory. NVSL scientists and support personnel perform diagnostic tests on nearly a quarter million samples each year.

NVSL offers nearly 500 specific diagnostic tests covering everything from basic screening tests for the importation of horses (equine infectious anemia testing) to elephant trunk wash



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cultures to detect tuberculosis. NVSL also provides diagnostic support to foreign animal disease investigations both at Ames, IA, and at the Foreign Animal Disease Diagnostic Laboratory (FADDL) located on Plum Island, NY. Further, NVSL offers over 500 reagents, many of which are not available from any other source. The NAHLN laboratories play a key role by performing initial screening tests for several foreign animal diseases.

ISO/IEC<sup>1</sup> 17025 is the international standard for testing and calibration laboratories. In order to demonstrate confidence in quality, NVSL has attained ISO/IEC 17025 accreditation for approximately 379 of nearly 500 tests (as of 2014). New tests are added to NVSL's accreditation scope annually. Based on FY 2013 test data, the NVSL met its goals with over 97 percent of results reported under accredited tests and over 82 percent of test methods accredited. NVSL was the first laboratory in the world to be accredited to ISO/IEC 17025 standards by the American Association for Laboratory Accreditation (A2LA) accrediting body. As of FY 2013, NVSL has 25 reference materials and 7 proficiency tests accredited.

## NVSL Testing Statistics, 2011–2013

| Fiscal Year | Accessions*<br>Received | Tests<br>Conducted | Samples<br>Tested |
|-------------|-------------------------|--------------------|-------------------|
| 2011        | > 66,000                | > 531,000          | > 211,000         |
| 2012        | > 52,000                | > 475,000          | > 193,000         |
| 2013        | > 47,000                | > 375,000**        | > 197,000         |

\* Requests for testing from a single entity

\*\* Methods by which conducted tests are counted was changed starting in FY 2013.

<sup>1</sup> International Organization for Standardization (ISO)/  
International Electrotechnical Commission (IEC)



U.S. Department of Homeland Security,  
Kathleen Apicelli

### A Center of Expertise

NVSL serves as a reference laboratory—a center of expertise and guidance on diagnostic techniques—both nationally and internationally. NVSL is the reference laboratory for USDA Veterinary Services “program diseases” (i.e., those designated as necessary to bring under control or eradicate from the United States). NVSL also provides reference assistance to other U.S. and international veterinary diagnostic laboratories as requested.

In addition, NVSL is a World Organization for Animal Health (OIE) reference laboratory for 15 diseases, including: avian influenza; anthrax; bluetongue; contagious equine metritis; eastern, western, and Venezuelan encephalomyelitis; equine infectious anemia; foot-and-mouth disease; leptospirosis; Newcastle disease; pseudorabies; swine influenza; vesicular stomatitis; and West Nile encephalitis. The Food and Agriculture Organization of the United Nations (FAO) has designated NVSL as a Reference Centre for foot-and-mouth disease and other vesicular diseases of the Americas and the Caribbean, animal influenza and Newcastle disease, and bovine tuberculosis and paratuberculosis.

### Collaboration and Training

NVSL collaborates with and provides scientific advice to other Federal and State government agencies that are also developing new tests and technologies. In addition, NVSL partners with other reference laboratories around the world and works with other countries to obtain diagnostic specimens from naturally infected animals. These collaborative efforts result in enhanced expertise at NVSL and extensive reference collections that are available for test development and validation.

Training for State and Federal field veterinarians to detect foreign animal diseases and training for laboratory diagnosticians are critical functions of NVSL. In FY 2013, NVSL provided technical training to over 95 participants in 14 different events. Courses were provided in the following areas:

- Equine Infectious Anemia (EIA)  
*(offered seven times)*
- Johne’s Isolation and Identification  
*(offered twice)*
- Virus Isolation
- Avian Influenza (AI) and Newcastle Disease (ND)
- Complement Fixation Serology Testing
- Polymerase Chain Reaction (PCR)

In addition, NVSL hosted several international trainees and visitors at its facilities in Ames, IA, and Plum Island, NY. For a current list of available training, download a copy of NVSL’s course catalog at **[www.aphis.usda.gov/NVSLTraining](http://www.aphis.usda.gov/NVSLTraining)**. NVSL also offers customized training (as resources allow) to meet specific needs.

### National Centers for Animal Health

The National Centers for Animal Health (NCAH) is a diagnostics, biologics regulation, and research center in which NVSL, USDA’s Center for Veterinary Biologics, and the USDA Agricultural Research Service’s (ARS) National Animal Disease Center are co-located, each with unique and complementary missions for animal health. The NCAH contains both biosafety level (BSL)-2 and BSL-3 laboratory space, as well as animal facilities and administrative space. NCAH employs a diverse staff of professionals to provide the laboratories with support services essential to their success.

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**NVSL Web site:**  
[www.aphis.usda.gov/nvsl](http://www.aphis.usda.gov/nvsl)

**NAHLN Web site:**  
[www.aphis.usda.gov/nahl](http://www.aphis.usda.gov/nahl)