RESOLUTION NUMBER: 7 and 18 Combined  APPROVED

SOURCE: USAHA/AAVLD JOINT COMMITTEE ON THE NATIONAL ANIMAL HEALTH LABORATORY NETWORK COMMITTEE ON INFECTIOUS DISEASES OF HORSES

SUBJECT MATTER: STANDARDIZATION OF EQUINE HERPES VIRUS-1 POLYMERASE CHAIN REACTION TESTING AT DIAGNOSTIC FACILITIES

BACKGROUND INFORMATION:
The National Assembly of State Animal Health Officials (National Assembly) requested in early 2012 that the United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Veterinary Services (VS), National Veterinary Services Laboratory (NVSL) perform a brief survey of United States (US) veterinary diagnostic laboratories across the country to determine the type of test methods in use for detection of neuropathic strains of Equine Herpes Virus-1 (nEHV-1). The survey summary results are:

1. **Response rate:** 21 of 26 laboratories completed the survey
2. **EHV-1 Test Method:** Real-time polymerase chain reaction (PCR) (17/21), Conventional PCR (6/21), Nested PCR (4/21). (Some laboratories conducted more than one PCR method.)
3. **Target Gene:** Glycoprotein B (12/21), Glycoprotein H (2/21), ORF (7/21), Polymerase gene (8/21)
4. **References:** Eleven different peer-reviewed publications from eight different authors were referenced as sources of the PCR methods.
5. **Number of laboratories with interest in participating in a neuropathic EHV-1 PCR Ring Trial:** 16/21

This survey highlights the National Assembly assumption that laboratories across the country were using different test methods to diagnose nEHV-1 infection. From a regulatory standpoint, it is difficult to make regulatory decisions with the differing nEHV-1 test methodologies currently in use. The National Assembly seeks standardization of nEHV-1 testing. Since nEHV-1 is not a regulated program disease within USDA-APHIS-VS, it is unlikely that standardization of nEHV-1 laboratory test methods will be forthcoming from USDA-APHIS-VS. Therefore, perhaps the American Association of Veterinary Laboratory Diagnosticians, USDA-APHIS-VS-NVSL and diagnostic laboratories can provide assistance to gain consensus for standardization for nEHV-1 testing.

The USDA-APHIS-VS-NVSL has agreed to conduct an inter-laboratory comparison nEHV-1 ring trial. A ring trial would be a good first step in determining whether or not the various nEHV-1 PCR tests in use across the US perform similarly. USDA-APHIS-VS-
NVSL could develop and implement the ring trial, but would need assistance from participating laboratories in providing EHV-1 virus isolates for optimal design of the ring trial with multiple isolates, potentially with differing genetics. This approach could provide more information about equivalent performance of the various PCR methods, across strains encountered in the field, than a ring trial using a single isolate.

RESOLUTION:

The United States Animal Health Association and the American Association of Veterinary Laboratory Diagonsticians request that the United States Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Services, National Veterinary Services Laboratory proceed with the neuropathic strains of Equine Herpes Virus-1 (nEHV-1) ring trial and make every effort to standardize testing methodology for nEHV-1 polymerase chain reaction testing at diagnostic facilities in the United States.

INTERIM RESPONSE:

The U.S. Department of Agriculture, Animal and Plant Health Inspection Service (APHIS) recognizes the concerns of the United States Animal Health Association and appreciates the opportunity to respond. VS supports this resolution, and understands the value of and the need to support diagnostic testing facilities through the development of an Equine Herpes Virus (EHV) ring trial. The National Veterinary Services Laboratories (NVSL) has implemented a collaborative effort with the American Association of Veterinary Laboratory Diagnosticians (AAVLD) to establish a working group whose goal is to design and implement an inter-laboratory comparison test (ring test) that will allow laboratories to test existing polymerase chain reaction (PCR) assays used for the detection and typing of EHV isolates and neuropathogenic EHV-1, and to establish their performance limits.

As part of this collaboration, NVSL is working with several participating laboratories to receive isolates for testing, propagation, and assembly of panels that it will offer to all interested laboratories this spring, at a cost of $197 for 12 samples. Once all panels are distributed and all test method and result information is collected and analyzed by NVSL and the working group, NVSL anticipates providing a report of individual laboratory results and a summary of all laboratory responses (redacted to retain anonymity) to all participating laboratories.