

# Schmallenberg Virus Guidance for U.S. Veterinary Diagnostic Laboratories

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Given the recent emergence of Schmallenberg virus (SBV) in Europe, Veterinary Services (VS) is taking several proactive steps to engage in the issue. One action is to collaborate with U.S. veterinary diagnostic laboratories to conduct passive surveillance on ruminants with compatible signs of Schmallenberg virus to determine if the virus is present in the United States.

The primary test for SBV detection is a real-time reverse transcriptase PCR (rRT-PCR). The National Veterinary Services Laboratories in Ames, IA (NVSL Ames) Diagnostic Virology Laboratory (DVL) has worked with Friedrich Loeffler Institut (FLI) in Germany to obtain the virus and PCR protocols to implement testing for the United States at NVSL Ames. The DVL is also working on a virus neutralization (VN) serologic assay to be used on a limited basis.

## Criteria for selection of cases to forward to NVSL Ames

Any case in ruminants submitted to a veterinary diagnostic laboratory in which more than one dam in herd/flock produces a fetus or neonate displaying signs of arthrogryposis hydranencephaly syndrome (AHS) may be submitted for SBV testing. AHS signs include stillbirth, premature birth, mummified fetuses, arthrogryposis, hydranencephaly, ataxia, paralysis, muscle atrophy, joint malformations, torticollis, kyphosis, scoliosis, behavioral abnormalities and blindness.

Differential diagnostic testing for other causes of reproductive problems should be handled by the local diagnostic laboratory. Samples to be forwarded to NVSL Ames that meet the above criteria can be sent concurrent to normal diagnostic workup. The VS Area Veterinarian in Charge (AVIC) and/or State Animal Health Official (SAHO) should be contacted.

Any cases identified by veterinarians as foreign animal disease (FAD) suspects should be handled as an FAD investigation per procedures detailed in VS Memo 580.4. The VS Area Veterinarian in Charge (AVIC) and/or State Animal Health Official (SAHO) should be contacted.

## Samples to be submitted to NVSL Ames

Should SBV occur in the United States, it is expected to manifest as reproductive problems. Therefore, NVSL Ames is currently requesting samples associated with reproductive signs. Samples for RT-PCR and VN are:

- From fetus: fetal brain, heart blood, serum ONLY
- From dam: serum ONLY

Submit all fresh specimens on ice packs. If there is a delay in shipment of samples, freeze tissues at -70°C; separate and freeze serum. Autolyzed samples are unsuitable for virology testing.

An NVSL submission 10-4 form is required. Submission forms and packaging and shipping information can be found at [http://www.aphis.usda.gov/animal\\_health/lab\\_info\\_services/diagnos\\_tests.shtml](http://www.aphis.usda.gov/animal_health/lab_info_services/diagnos_tests.shtml). Indicate Schmallenberg virus or SBV in the "Exams Requested" box on the 10-4 submission form.

## Testing at NVSL Ames

Testing by NVSL Ames will be limited to Schmallenberg and Cache Valley Viruses. Testing for other diseases must be conducted at the local diagnostic laboratory **prior to or concurrently with submission to NVSL Ames**. Samples submitted to NVSL Ames will be appropriately destroyed after testing. Initial surveillance testing will be at no charge, and laboratories will be informed prior to implementing any fees for this testing.

## Communication

Inform the AVIC and SAHO when submitting samples to NVSL Ames for testing.

All test results from NVSL Ames will be distributed to the entity that submitted the sample to NVSL and the appropriate AVIC per normal test result reporting protocols. The AVIC will then provide the results to the SAHO.

Any updates to this information for laboratories will be provided as the SBV situation changes.

More general information can be found in the VS document entitled *Schmallenberg Virus: Case Definition and Guidance*.