

TESTING SHEEP AND GOATS FOR *Mycoplasma ovipneumoniae* (Movi)

Bighorn sheep were historically widespread in the steep canyons of Western North America. In the past century, people have worked to save these majestic animals from the brink of extinction. Currently, the biggest threat to bighorn sheep is a deadly pneumonia caused by bacteria carried by domestic sheep and goats.

Recent research has identified *Mycoplasma ovipneumoniae* (Movi) as the infection that triggers bighorn sheep pneumonia outbreaks. Movi is commonly carried by healthy-appearing domestic sheep and goats, but infection of bighorn sheep may kill up to 80% of the herd in the initial outbreak alone.

Movi also causes problems in domestic sheep and goats. Fatal pneumonia, though uncommon, invariably involves Movi infection. More commonly, Movi infects weaned lambs and kids, causing a coughing syndrome and decreased rate of

gain. No Movi vaccine is available for bighorn sheep or for domestic sheep or goats.

Therefore, to prevent pneumonia, domestic sheep and goats must be kept separated from their wild cousins. A wandering bighorn ram may join a group of domestic sheep or goats, or a stray sheep or goat may join a bighorn herd; in either case the risk of disease transmission is greatly increased.

A single contact between a bighorn sheep and a domestic sheep or goat can trigger a devastating pneumonia outbreak. Testing for Movi can help the sheep or goat owner determine whether their herd represents a risk to nearby bighorn sheep.

Step 1: Sample the herd

Encourage the owner to confine their animals prior to your arrival. Recruit the owner or bring assistance to help with restraint, as needed. The actual process of sampling is quick and easy: Using a synthetic swab (not cotton tipped) with a plastic shaft (not wood), insert the swab deeply into each nares in turn. Then break off the swab in a vial of mycoplasma broth, and hold it at room or refrigerator temperature until it can be shipped to the lab.

If you are unable to procure Movi enrichment broth, conduct the sampling



Photo by Laura Heinse

anyway, and simply keep the swab clean, dry, and uncontaminated, sending it to WADDL as otherwise indicated. WADDL has recently reported high success in isolating Movi from swabs without the broth

How many animals should be sampled? If the goal of sampling is to determine the herd status of large herds, sampling ten animals should suffice. If the goal is to sample to identify individual carrier animals for a test and segregate approach to elimination of Movi from the herd, all the animals should be sampled, and the Movi negative group should be re-sampled at least once two weeks or more after the initial sampling.

Step 2: Submit the samples

The swabs should be submitted to WADDL with a completed accession form and an identification form for multiple animals; both forms are available from the WADDL website (waddl.vetmed.wsu.edu). Tick the PCR box in the tests requested section, and indicate you are requesting Movi PCR.



Photos by David Volsen

Step 3: Follow up with owner

If the herd is Movi-free, the owner should be advised that to keep this status they will need to operate a 'closed herd', avoiding contacts with potentially Movi-infected sheep or goats.

If the herd is currently Movi-infected, the owner can be advised about the methods to eliminate this bacterium. Culling Movi carrier animals will greatly reduce the risk they pose to bighorn sheep. Also, since young stock typically remain Movi-uninfected for at least 2 months after birth, lambs and kids weaned and separated from carrier ewes or does by 2 months of age will also be Movi-free.

Ordering supplies

Movi broth can be ordered at Hardy Diagnostics: Catalog #R102
\$40+shipping for 20 vials

<http://www.hardydiagnostics.com/>

Nasal swabs can be ordered at Andwin Scientific, catalog #B220144
\$120-130 plus shipping for 100 swabs

<http://andwinsci.com/>

Questions

APHIS Veterinary Services Center
for Epidemiology and Animal
Health **Mycoplasma
ovipneumoniae on U.S. Sheep
Operations Info Sheet** (2015).

[http://www.aphis.usda.gov/
animal_health/nahms/sheep/
downloads/sheep11/
Sheep11_is_Myco.pdf](http://www.aphis.usda.gov/animal_health/nahms/sheep/downloads/sheep11/Sheep11_is_Myco.pdf)

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