Use of Deep Nasopharyngeal Swabs for Bovine Respiratory Disease Testing
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Introduction

Deep nasopharyngeal swabs have been validated as a viable alternative to trans-tracheal wash or bronchial-alveolar lavage in cases of bovine respiratory disease and are superior to nasal swabs especially for *Mycoplasma bovis*.

The technique is simple and safe to perform and is very reliable.

Materials required for sample collection and submission:

1. **Double Guarded Culture Swab (33 inch length):** For bacteriological culture, one swab is required for each animal sampled. If the submitting veterinarian wants both bacteriology and virology testing done then two swabs are needed for each animal sampled.

2. **Bacterial Transport Media:** Amies Transport Medium with Charcoal

3. **Viral Transport Media

4. **WVDL General Submission Form:** An electronic copy is available at [www.wvdl.wisc.edu](http://www.wvdl.wisc.edu). Click on the forms link to download the submission form. The forms can be filled out either manually or electronically.

The double guarded culture swab, viral and bacterial transport media can be purchased from the Wisconsin Veterinary Diagnostic Laboratory Madison (WVDL), WI. Telephone 608-262-5432. Allow sufficient time (3-5 working days) for delivery of the kit. The cost of the bacterial sampling kit which includes six double guarded culture swabs and bacterial transport media is $30.00. The cost of the viral sampling kit which includes six double guarded culture swabs and viral transport media is $45.00. The cost of the bacteriology/virology sampling kit which includes 12 double guarded culture swabs, six bacterial transport media and six viral transport media is $65.00. In addition to the cost of the kit, the WVDL will also charge for the shipping costs as well.

Livestock producers can purchase a kit with a valid credit card. The cost of the kit does not include the testing costs. Pharyngeal swab samples must be submitted to the laboratory by a licensed veterinarian. Testing will not be done unless the WVDL receives a completed General Submission Form that is signed by a veterinarian. Livestock producers should coordinate the collection of samples with their herd veterinarian.
Collection procedures:

Veterinarians should plan on sampling 4-6 animals during an acute outbreak of respiratory disease. If at all possible, samples should be collected before the onset of antimicrobial treatment. Samples must be chilled within 1-2 hours of collection.

1. Restrain the animal’s head. The animal’s head cannot move. Movement of the head can cause the swab to break off in the pharynx.

2. Clean the nostrils with a clean, disposable cloth.

3. Measure the distance from the nostril to the medial canthus of the eye.

4. Remove the twist tie from the culture swab.

5. Insert the 33 inch double guarded culture swab into the ventral meatus of the nose and advance it the pre-measured distance from the nostril to the medial canthus of the eye. Swabs placed in the dorsal meatus of the nose cannot advance far enough to obtain a deep pharyngeal sample.

6. Retract the culture swab approximately 1-2 inches.

7. Push the inner blue PVC swab sheath through the end of the outer clear PVC tube.

8. Push the cotton-tipped polystyrene swab through the blue PVC swab sheath for a distance of roughly 1-2 inches. Vigorously rotate the swab against the pharyngeal mucosa for 30-45 seconds.

9. Retract the cotton tipped swab into the blue PVC swab sheath.

10. Remove the entire double guarded swab from the animal’s nose.

11. Using a clean pair of scissors cut the cotton tipped swab roughly 5-6 inches from the tip. Do not cut the swab too short; short swabs are difficult to remove from the transport media. Place the swab in the bacterial transport media. Make sure the cotton-tipped swab is fully immersed in the black transport media.

12. Repeat the procedure with a different double guarded culture swab in the other nostril. Cut the cotton tipped swab roughly 4-5 inches from the tip. Place the swab in the viral transport media.

13. Label all the transport media legibly with the animal’s identification number or name. Please make sure the animal’s I.D. matches exactly the I.D. on the WVDL General Submission Form.

14. If the samples cannot be shipped immediately, they should be temporarily stored at 4 °C. Maintaining swabs at 4 °C instead of at room temperature increases the recovery rate of bacterial pathogens from diagnostic samples.\textsuperscript{3,4}
Shipping Requirements

- **Completely fill out** the WVDL General Submission Form. The form can be filled out either manually or electronically. For bacteriology, request the bovine respiratory disease panel which includes *Mycoplasma* spp. For virology, request the bovine respiratory disease panel. The panel includes real time PCR testing for IBR, BVD, BRSV and respiratory corona virus.

- Send the samples **overnight** with a sufficient number of ice packs to ensure they remain cold during shipment to the laboratory. The laboratory should receive the samples no later than 24-36 hours after collection.

- If possible, clients should schedule shipments to avoid weekend and holiday delivery of samples to the laboratory.

References


