Comparison of Post-mortem Diagnostic Methods for Cases of Bighorn Sheep Lamb Pneumonia

KAREN A. FOX,[1] *Wildlife Research Center, Colorado Division of Parks and Wildlife, 317 W. Prospect Road, Fort Collins, CO 80526, USA*
HANK EDWARDS, *Wildlife Disease Laboratory, Wyoming Game and Fish Department, 1174 Snowy Range Road, Laramie, WY 82070, USA*
JAMIN GRIGG, *Wildlife Research Center, Colorado Division of Parks and Wildlife, 317 W. Prospect Road, Fort Collins, CO 80526, USA*
MARY WOOD, *Wildlife Disease Laboratory, Wyoming Game and Fish Department, 1174 Snowy Range Road, Laramie, WY 82070, USA*
JESSICA JENNINGS-GAINES, *Wildlife Disease Laboratory, Wyoming Game and Fish Department, 1174 Snowy Range Road, Laramie, WY 82070, USA*
HALLY KILLION, *Wildlife Disease Laboratory, Wyoming Game and Fish Department, 1174 Snowy Range Road, Laramie, WY 82070, USA*
IVY LEVAN, *Wildlife Research Center, Colorado Division of Parks and Wildlife, 317 W. Prospect Road, Fort Collins, CO 80526, USA*
KAREN GRIFFIN, *Wildlife Research Center, Colorado Division of Parks and Wildlife, 317 W. Prospect Road, Fort Collins, CO 80526, USA*
MICHAEL W. MILLER, *Wildlife Research Center, Colorado Division of Parks and Wildlife, 317 W. Prospect Road, Fort Collins, CO 80526, USA*

ABSTRACT During the spring of 2013, we examined post-mortem tissues from bighorn sheep (*Ovis canadensis*) lambs with pneumonia. Lambs originated from 2 herds in Colorado with a history of poor lamb recruitment. Four diagnostic methods were used to analyze post-mortem tissues: 1) bacterial culture; 2) polymerase chain reaction (PCR) assay using culture plate-wash DNA; 3) PCR assay using lung tissue DNA; and 4) histopathology. We detected both *Mycoplasma ovipneumoniae* and leukotoxigenic *Pasteurellaceae* in each lamb by at least one diagnostic method. PCR assays were the most sensitive method of detection with no significant difference between results from PCR assays using culture plate-washes and assays using lung tissue. Autolysis of tissues did not inhibit detection of organisms by PCR. Overall, our diagnostics provided a clear picture of bacterial pneumonia caused by a combination of *Mycoplasma* and *Pasteurellaceae* agents in both herds. However, we observed inconsistent results when diagnostics were applied to a single sample or single individual, highlighting the need for diagnostic investigations at the herd level whenever possible.

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[1] *E-mail: karen.fox@state.co.us*