

EVIDENCE FOR MYCOPLASMA OVIPNEUMONIAE AS THE PRIMARY CAUSE OF EPIZOOTIC PNEUMONIA IN BIGHORN SHEEP (*OVIS CANADENSIS*) - AND WHY IT MATTERS

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Abstract: Pneumonia is an important, population-limiting disease of bighorn sheep (*Ovis canadensis*) that typically occurs in the form of epizootics. Several species of bacteria are frequently isolated from lung tissues of affected animals of which *Mannheimia haemolytica* has received the most research attention. However, *M. haemolytica* fails to meet several expectations of a common epizootic agent, including prevalence in affected animals and evidence of epizootic transmission. *Mycoplasma ovipneumoniae* has also been proposed as a primary agent of bighorn sheep pneumonia. In this presentation we showed that *M. ovipneumoniae* better meets epizootic agent expectations, including very high prevalence in affected animals within outbreaks, very high prevalence across outbreaks, existence of single strain types within outbreaks, and absence from most non-pneumonic populations. In addition, *M. ovipneumoniae* is clearly involved in experimental disease transmission from domestic sheep to bighorn sheep. Accurate identification of the epidemic infectious agent is critical to understanding the sources and reservoirs, transmission dynamics, and eventually effective management and control measures for this devastating disease. These results suggest that *M. ovipneumoniae* should be the focus of research efforts towards this end.

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