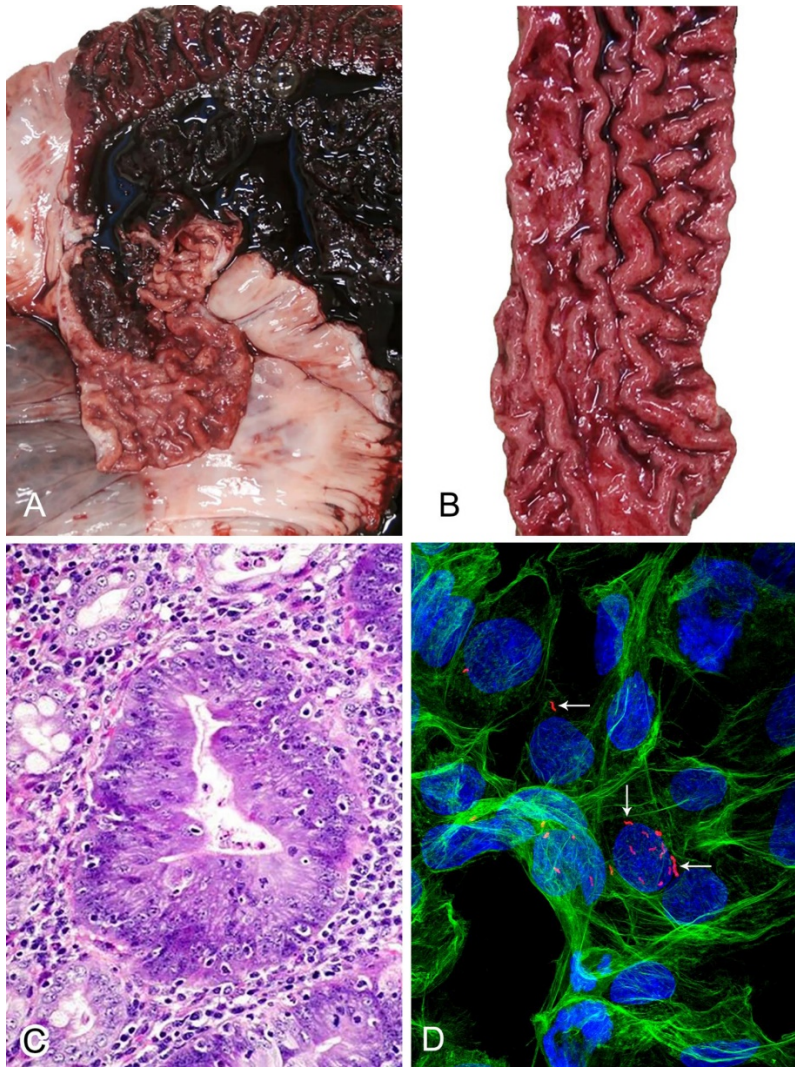


## JVDI in Focus

Our June focus is the Review article in JVDI's upcoming July issue: "Review of methods for the detection of *Lawsonia intracellularis* infection in pigs," by Marta Campillo, Sionagh H. Smith, David L. Gally, Tanja Opriessnig.

J Vet Diagn Invest 2021;33(4). <https://doi.org/10.1177/10406387211003551>

**Abstract.** *Lawsonia intracellularis* is an obligate intracellular bacterium associated with enteric disease in pigs. Clinical signs include weight loss, diarrhea, and, in some cases, sudden death. The hallmark lesion is the thickening of the intestinal mucosa caused by increased epithelial cell replication, known as proliferative enteropathy. The immune response to *L. intracellularis* is not well defined, and detection of the infection, especially in the early stages, is still a significant challenge. We review here the main approaches used to identify this important but poorly understood pathogen. Detection of *L. intracellularis* infection as the cause of clinical disease is confounded by the high prevalence of the pathogen in many countries and that several other pathogens can produce similar clinical signs. A single *L. intracellularis*-specific ELISA and several amplification assays are available commercially to aid detection and surveillance, although histopathology remains the primary way to reach a conclusive diagnosis. There are major gaps in our understanding of *L. intracellularis* pathogenesis, especially how the host responds to infection and the factors that drive infection toward different clinical outcomes. Knowledge of pathogenesis will increase the predictive value of antemortem tests to guide appropriate interventions, including identification and treatment of subclinically affected pigs in the early stages of disease, given that this important manifestation reduces pig productivity and contributes to the economic burden of *L. intracellularis* worldwide.



**Figure 1.** *Lawsonia intracellularis* infection and associated lesions. **A.** Pig ileum from a case of acute proliferative enteropathy (PE). The lumen is filled with clotted blood, and the exposed mucosa is markedly thickened and corrugated. **B.** Pig ileum from a case of acute PE. The blood clot has been removed to expose the highly corrugated mucosa. A severe case of chronic PE would appear similar grossly, lacking only the intraluminal blood clot. **C.** Dramatic enterocyte hyperplasia in an intestinal crypt from a case of PE, in which there is also goblet cell depletion. H&E. 400 $\times$ . **D.** PK15 cells infected with *L. intracellularis*, which is labeled with a specific monoclonal antibody and detected with AlexaFluor594 (red; arrows). PK15 actin is labeled with phalloidin-495 (green), and nuclei are labeled with DAPI (blue). Immunofluorescence with confocal microscopy. 400 $\times$ .

## JVDI News

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