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Investigation of *Lawsonia intracellularis* serodynamics according to age and annual season using a standardized diagnostic methodology in growing swine.

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Introduction and Objectives

Infection of swine with *Lawsonia intracellularis* (*Li*) causes Proliferative Enteropathy, commonly referred to as “ileitis”. Clinical signs can occur throughout the year, but are most often reported during warm summer and fall months.¹ Ileitis can also be subclinical. Defined as *Li* infection with positive diagnostic evidence in the absence of clinical signs, subclinical ileitis decreases performance and muscle growth.² This study evaluated cross-sectional *Li* serologic results to determine if the reported increase in clinical signs in summer or fall seasons corresponded to an increase in *Li* seroprevalence.

Materials and Methods

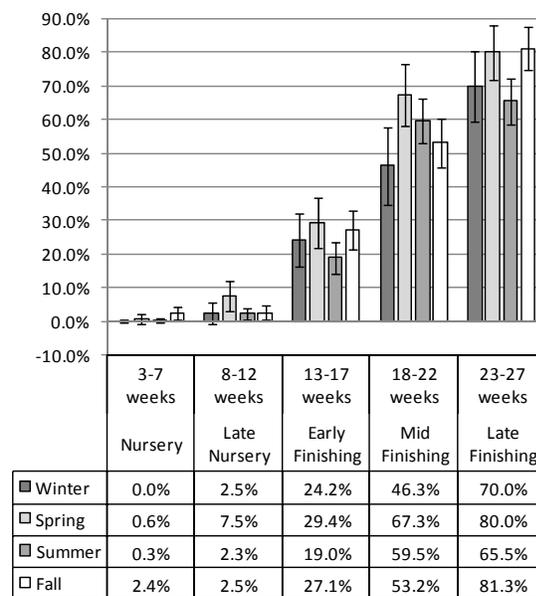
Swine herds in the United States were cross-sectionally sampled in a four year period (2007-2010) as part of a previously described diagnostic protocol.³ These diagnostic investigations were conducted for a variety of reasons including expression of clinical signs or history of poor performance in a flow. Clinical signs may or may not have been indicative of *Li* infection. In addition to testing for other pathogens, serum samples were assayed for *Li* antibodies using a blocking ELISA.⁴ To achieve bias reduction, this ELISA was performed and reported by robotic laboratory equipment, with test wells filled in sequence of submission regardless of pig age or blood collection date. Pig flows chosen for this analysis had ELISA results from at least 10 head in a minimum of 4 of 5 wean-to-market age groups, and were sampled in a single season.

Results

85 of 116 pig flows (12 winter, 16 spring, 32 summer and 25 fall) sampled met the inclusion criteria for this analysis. 100% of the flows had at least one *Li* positive test result. No trends were identified in the seasonal prevalence of *Li* in this data set. All 95% confidence intervals overlap except two pairs (Mid Finishing: winter

46.3% (0.348, 0.577) and spring 67.3% (0.581, 0.765); Late Finishing: summer 65.5% (0.587, 0.723) and fall 81.3% (0.749, 0.876)). There were no significant prevalence differences between winter/spring (cool) and summer/fall (warm) seasons.

Figure 1: Percentage of individual pigs, ileitis ELISA positive by age group, by season. Error bars represent 95% confidence intervals.



Discussion and Conclusions

Although clinical signs of ileitis are reported more often during hot, late summer months, these findings suggest no difference in serological prevalence of *Li* in warmer vs. cooler seasons. Additionally, as 100% of pig flows sampled were positive for *Li*, regardless of season, this information supports potential performance losses due to subclinical ileitis as a year-round concern.

References

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4. Keller C, et al. *Proc IVVDC*. 2006.