

## Evaluation of the Importance of Coccidia in Ontario Suckling Piglets

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### Introduction

Coccidia (*Isospora suis*) is a protozoan parasite that reproduces in cells lining the small intestine of pigs. In Europe, this parasite is recognized as a frequent and important cause of diarrhea and uneven weight gains in suckling piglets.<sup>1-3</sup> Unfortunately, current information on the importance of coccidiosis in Canadian pigs is not available – the last study was carried out in the late 1970s.<sup>4</sup> Furthermore, as the industry has moved away from concrete floors in the farrowing room and hygiene has improved, many people have assumed that coccidia has disappeared or diminished in importance. However, anecdotally, the parasite is a significant problem on some Ontario farms.

In most countries the only drug that has been licensed for prevention of coccidiosis in piglets is Baycox (toltrazuril) – administration of a single dose in the first week of life has significant economic benefits.<sup>5,6</sup> Although Baycox was never licensed for use in Canada it was commonly used under veterinary supervision with an emergency import permit. Unfortunately, in 2005, the use of the drug in pigs in Canada was banned because of concerns about human safety issues. As a result, Canadian swine producers are now without a drug with proven efficacy against coccidiosis. In order to maximize the chance of either the ban on Baycox being reversed or an alternative drug being approved for use in Canada, it would greatly help if information was obtained on the current importance of coccidia in suckling piglets. It would also help swine producers if management practices can be identified that reduce the risk of coccidia infections in piglets.

### Objectives

- (a) To determine the prevalence of coccidia infections in Ontario suckling piglets.
- (b) To determine if coccidia infections are associated with diarrhea and/or reduced growth rates in suckling piglets.

### Materials and methods

Fifty representative Ontario herds were selected for this study and visited between May and August 2006. Depending on herd size, up to 10 litters were selected on each farm in each of two age groups: 7-15 days of age and 16-21 days of age. Piglets aged 16-21 days were individually weighed and a fecal sample was collected from 3-5 piglets per litter. Fecal samples were similarly collected from litters of pigs that were 7-15 days of age. All weaning weights were standardized to 21 days of age and a survey was conducted on each farm to obtain information on the environment in which the piglets were housed and any treatments performed. All fecal samples were scored for consistency (to determine if piglets had diarrhea) and examined for coccidia oocysts. The number of oocysts was determined per gram of feces to evaluate the level of shedding in to the environment.

### Results

Farms ranged in size from 30 to 1700 sows and had an average of 411 sows. Coccidia infections were detected on 70% of farms. Furthermore, the intensity of oocyst shedding in feces ranged from 1 oocyst to over 500 oocysts per gram of composite feces, i.e. very low to high levels. On farms with coccidia infections, the proportion of litters infected with coccidia ranged from 5% to 100% (average = 29%).

On 42 of the 50 farms (84%) at least one litter aged 7-21 days was found to be experiencing diarrhea. Furthermore, an average of 47% of litters experiencing diarrhea were positive for coccidia. By comparison, 24% of non-diarrheic litters in the same age range were positive for coccidia. These data

indicated that litters that had coccidia were 4 times more likely to have diarrhea than non-infected litters.

On farms with coccidia infections the average standardized weaning weight was 6.3 kg, while the average standardized weaning weight on coccidia-negative farms was 6.7 kg.

### **Discussion**

The proportion of coccidia-positive farms found in this study (70%) is comparable to the value obtained in a recent study on 324 farms in Germany, Austria and Switzerland (76%).<sup>3</sup> The average proportion of infected litters on coccidia-positive farms (29%) is also comparable to the European study.

Litters that were infected with coccidia were significantly more likely to experience diarrhea between 7 and 21 days of age than litters that were not infected with coccidia. Furthermore, coccidia were detected in 24% of the fecal samples from litters with no diarrhea (sometimes at high levels) – this is of concern as recent data have indicated that subclinical infections (i.e. infections without diarrhea) may have a significant negative impact on growth rates.<sup>6</sup>

In summary, this study has indicated that coccidia is commonly found on Ontario farms and is associated with both clinical and subclinical infections. Hopefully this will remind practitioners that coccidiosis is still a problem on many farms and should not be ignored. Future work will be carried out to determine the impact of coccidia on growth rates up to 8 weeks of age. In addition, a number of possible treatments for coccidia will be evaluated.

### **Acknowledgement**

Ontario Pork is thanked for funding this study.

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