

## **Disease Update – 2006\***

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The Ontario swine industry was hit with three major viral respiratory diseases, starting in late 2004, resulting in the creation of the "perfect storm", in which losses from PRRS, PCVAD and swine influenza were high. In addition, secondary bacterial involvement further compounded the losses. Unfortunately for industry, this continued into 2006 as well. From a practitioner's point of view, the difficult task was to identify the disease producing agents involved and then to assess the importance of each agent in an effort to reduce their impact.

### **PRRSvirus**

As expected, the numbers of new infections decreased during the summer months, but rose again in late fall. As far as the disease expression was concerned, there was little change from previous years. As in 2006, samples were forwarded to the PRRS sequencing project, sponsored by Ontario Pork, and carried out by Dr Cate Dewey.

### **Porcine Circovirus Associated Disease (PCVAD)**

The American Association of Swine Veterinarians defined this syndrome, with the definition including the statement that the disease must be confirmed microscopically, with the following features being present

- a doubling of the historical mortality rate, with no introduction of new pathogens
- depletion of lymphoid cells
- granulomatous inflammation in tissues, and
- detection of PCV2 within lesions

PCVAD, along with PRRS, continued to have a devastating impact on the swine industry in 2006. Disease outbreaks commonly occurred at one of two times, those being in the nursery, or later in the grower phase. The nursery outbreaks often were detected in farrow-to-finish operations, and the grower outbreaks in 3-site production units.

PCVAD was diagnosed from 190 pathology-related submissions to AHL, from a total of 2,248 submissions (8.4% of total submissions). Of interest, the total for December dropped to 5.2% of the month's total submissions. This coincided with the introduction of porcine circovirus type 2 vaccines in late summer. It will be interesting to see if this downward trend continues in 2007.

In addition to its significance as a primary pathogen, the PCV2 virus was often identified with other disease-producing agents.

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\* data presented was obtained from the files of Animal Health Laboratory, Laboratory Services Division, University of Guelph

Agent	PCV2		PRRSv	
	#tested	# positive	# tested	# positive
M. hyopneumoniae	14	13	10	6
A. pleuropneumoniae	8	5	7	3
H. parasuis	24	16	27	15
L. intracellularis	4	4	5	1

### Swine Influenza

Swine have receptor sites for avian, human and swine strains of influenza, and are to be "mixing vessels" for influenza. Since genetic reassortment of the virus can occur during interspecies transfer, it is important to type all SIV isolates. In 2005, the H3N2 strain appeared as a major pathogen, and isolates of this strain were identified 32 times, vs 16 times for the H1N1 strain. In 2006, almost equal numbers of H1N1 and H3N2 strains were identified.

### Mycoplasma hyopneumoniae

Two age groups were commonly affected, those being pigs from 5-9 weeks of age, and 14-20 weeks of age. There has been a marked decrease from 2005, in the number of diagnoses of Mycoplasma hyopneumoniae-induced pneumonia in swine - at least in the number of submissions in which the organism was positively identified. The reason is not known.

In summary, the devastating effects of the major respiratory swine diseases continued in 2006. With the release of at least 3 different circovirus vaccines in late 2006, and the apparent positive effect that vaccination has had, it is hoped that the impact of this virus will be diminished. It is also hoped that the educational efforts of the Ontario Pork Industry Council's Swine Health Advisory Board (OSHAB) will play a role in reducing the losses due to PRRS.