

by TREENA HEIN

Porcine Reproductive and Respiratory Syndrome (PRRS) is one of the most costly diseases affecting the swine industry world-wide. The projected PRRS price tag for the U.S. swine industry, for example, has been calculated to be US\$560.32 million per year.

In the fall of 2004 and winter of 2005, swine veterinarians reported seeing an increase in the prevalence of porcine reproductive and respiratory syndrome in south-western Ontario and an increase in the severity of clinical signs in these outbreaks. This epidemic was also detected at the Animal Health Laboratory (AHL) at the University of Guelph, when both the number of cases submitted for PRRS polymerase chain reaction (PCR) testing and the total number of cases testing PCR-positive for PRRS virus increased.

In order to better understand detection and treatment of the disease, a University of Guelph team – Beth Young, Cate Dewey and her group, Zvonimir Poljak and Thomas Rosendal (Department of Population Medicine) and Susy Carman (AHL) – has been gathering information on the reporting of clinical signs, herd demographics and disease control strategies relating to current and recent PRRS outbreaks in Ontario. Technicians Karen Richardson and Doug Wey assisted with data collection.

Explains Dewey: “We surveyed 455 producers who had positive PRRS cases identified by AHL between September 2004 and January 2007 on the clinical signs observed in their herds, herd demographics and PRRS control strategies used during outbreaks.

“In herds housing sows, we found that the most commonly reported clinical signs were high pre-weaning mortality, weak-born piglets and sow mortality, all of which were more common in larger herds than smaller herds,” she notes. “In terms of herd types, farrow-to-wean farms were more likely to report abortions, whereas farrow-to-finish farms were more likely to report a full range of clinical problems due to PRRS than other herd types.”

Clinical problems in the nursery units were not found to be associated with capacity. However, increasing the unit size of the finisher barn and the use of all-in/all-out management of the finisher barn were both associated with increased odds of respiratory disease and mortality.

“It is likely that these two factors are linked to one another,” says Dewey. “Although all-in/all-out is expected to be a very positive management tool, it may be associated with a significant and dramatic outbreak of clinical PRRS in a naive herd, rather than an on-going, long-term lower rate of mortality.”

Commercial vaccines were used in more than 33 per cent of farms, with most using the vaccine for gilts on arrival or gilts before breeding. It was seldom used in nursery or growing pigs. In examining disease control strategies, the team found that the use of a commercial PRRS vaccine in sows and gilts was associated with a decreased risk of weakborn pigs and pre-weaning mortality. Specifically, using the PRRS vaccine for in-coming gilts was associated with reduced nursery pig mortality.

Conversely, Dewey says, “the use of serum inoculation in breeding animals increases the likelihood of sow mortality and sows going off their feed. Biofeedback to gilts increased the likelihood of respiratory disease and mortality in finisher pigs. The use of all-in/all-out management of the farrowing room had higher odds of weakborn pigs and sow mortality.”

Almost 11 per cent of herds with gilts used serum inoculation and 25 per cent used biofeedback. Of the herds that housed sows, 27 per cent used no vaccination, serum inoculation or biofeedback.

The most frequent isolates were RFLP types 1_4 (25.1 per cent), 252 (14.7 per cent), 134 (12 per cent), and 1_2 (eight per cent). The distribution of RFLP types in this study was found to be different from a previous investigation in Ontario. Type 184 appeared to be a new isolate during the study period. Although type 1_4 was present prior to the start of the study, the rate of isolation of this RFLP type increased during the study period.

Dewey stresses that the results of this study must be interpreted in light of how the data was collected. “The study covered predominantly herds that included sows, and the measure of the concern about clinical disease was the opinion of the producer who responded to the survey,” she says.

“Producers must determine the PRRS control strategies most appropriate to their herd, given their geographic location, herd type and history of clinical problems with the disease.”

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All-in/all-out management and finisher barn size increase odds of respiratory disease

These are among the conclusions of research conducted by a Guelph team into recent PRRS outbreaks in Ontario

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and mortality