



MARTIN SCHWALBE

Cate Dewey and
Zvonimir Poljak

That's just one of the findings in a Guelph study into the spread of PRRS in Ontario herds

Beware a truck carrying that hasn't been washed, disinfected

by MARY BAXTER

The role transportation of gilts can play in the spread of Porcine Reproductive and Respiratory Syndrome (PRRS) is just one of the findings beginning to emerge from an ambitious project that is looking at the spread of the disease in Ontario. Launched in 2005 by University of Guelph researchers Dr. Cate Dewey, chair of the Ontario Veterinary

College's department of population medicine, and Dr. Zvonimir Poljak, an assistant professor with the department, the project has mapped clinical problems linked with PRRS in Ontario herds from September 2004 to August 2007.

In total, the study identified 382 locations and 513 herds, says Poljak, who explains that case farms were identified through PRRS-positive submissions to the university's animal health lab.

Describing the study as "a mass undertaking not only in logistics but in analysis of data as well," Poljak says that there's still a lot of material to review. Nevertheless, it's already yielding results, both researchers say.

One of these is the recognition that if a truck carrying gilts visited other farms before visiting your farm and if it wasn't always washed, disinfected and dried before it arrived, "you were put at an increased risk of getting PRRS," says Dewey.

The problem is Ontario-specific, she adds, pointing out that in some North American jurisdictions, "they wouldn't dream of putting gilts on a truck which hadn't been cleaned."

Using a genetic approach to classifying different genotypes of the virus, the researchers were able to identify what clinical signs were typically seen with different genotypes and also prove that one genotype not frequently found before the study period was actually quite common during the study. Named 1-undetermined-4, the genotype is

associated with significant reproductive problems such as abortions, stillbirths, high pre-weaning mortality and sows going off feed.

About 77 per cent of herds infected had a wild type of the virus. Of these, 20 per cent had a unique genetic version of the type. But, on average, the researchers found that,

where one herd was infected with a certain genotype of the virus, there would be another nine herds manifesting the same virus – and not necessarily on the same premises. There was one virus found in 55 herds.

“I think that finding is important because when we started the study, some people said that every virus is going to be unique from farm to farm,” says Dewey. “Finding the same virus on multiple farms will enable the researchers to determine the spread of the virus.”

As they continue to review the information, the researchers anticipate coming up with more findings. Yet both admit the study has presented an immense challenge. Poljak explains that it has to do with the lack of information that people submit when sending samples for testing. Currently, it’s not mandatory to identify the premises from which a sample is collected for lab tests.

In the hog industry, the problem is compounded because a single farm may have several barns located in different areas throughout the province. As a result, Poljak says, about 40 per cent of his time over the past several months has been spent just to locate the herds.

Dewey notes that this challenge indicates that in future, if geographic mapping is to be used for the study of disease outbreaks, conventions around submitting lab samples are going to have to change.

“One of the big take-home messages from this project is the need to encourage the industry to adopt and record premise identification when they submit



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Dr. Zvonimir Poljak is an assistant professor with the University of Guelph Ontario Veterinary College's Department of Population Medicine. In recent years, Dr. Poljak has done a considerable amount of work looking at risk factors and the clustering of pathogens such as salmonella and influenza virus.

In particular, he has been involved in a study which has mapped PRRS (Porcine Reproductive and Respiratory Syndrome) outbreaks in Ontario in an effort to determine what factors might be involved in the spread of the disease. Dr. Poljak says that he'd like to continue working on PRRS, which he describes as one of the most serious diseases affecting the swine industry.

"We need to work together to understand how it's spreading and what we can do in terms of eradication of that disease," he says.

He's a strong proponent of what he terms spatial epidemiology – the use of mapping to track a disease – and points out that the practice not only allows researchers to take into account risk factors such as herd type, but also geographic considerations, such as the clustering of disease in a certain area or the movement of animals from one area to another.

This information in turn can help in the understanding of how disease spreads among herds and can subsequently be used in simulation models used to identify strategies to control disease, he says.

Dr. Poljak acquired his DVM in Croatia in 1998 and a M.Sc. in epidemiology from the University of Guelph in 2001. In 2006, he completed his PhD at the university and took on his current position in 2007.

gilts and dried

samples to the animal health lab," she says. The lab has now come out with a new form which includes a field for the information and is encouraging veterinarians and producers to fill out that field.

Having such information has not only proved important to studying PRRS today, but will also be key in determining herd health in the future, says Poljak.