

UNDERSTANDING THE SPREAD OF PRRS BETWEEN HERDS

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ABSTRACT

If we are to understand the spread of the PRRS virus among herds in Ontario, we will have to have a large proportion of Ontario swine herds participate in the study that is currently occurring in Ontario. Major factors associated with the spread of this disease will be missed if only a small segment of the Ontario industry participates. Herds that are PRRS virus negative are equally important- otherwise the researchers may incorrectly identify factors common to negative and positive herds. Results of this research will assist with the prevention of PRRS virus infections in the future. The purpose of this paper is to describe the objectives of the PRRS mapping project and to encourage swine producers in Ontario to participate. Information collected from participating producers will be kept confidential. Each barn will be given a unique identification number so that persons working with the data will not know the name of the producer or the name of the farm. A summary of the data collected from this project will provide the backbone of the oral presentation.

PRRS VIRUS MAPPING PROJECT

Purpose of the Research

The main objective of the PRRS virus mapping project is to determine how the PRRS virus is spreading among farms in Ontario. We will identify the various PRRSV strains in Ontario as measured by the gene sequences and create a system to track the movement of the virus between herds. Once we understand how the virus is moving between herds, we will be able to recommend ways producers can prevent, control and ultimately eliminate this disease from their herds.

Current Status of the Research

The PRRS mapping project is well on its way. We have a team of committed researchers working on the project including Dr. Beth Young and Dr. Zvonimir Poljak, Karen Richardson and Thomas Rosendal and myself. Dr. Susy Carman and her team of technicians in the Animal Health Laboratory (AHL) are doing the PCR and gene sequencing analyses. Dr. Beverley McEwen, also from the AHL, has also helped with the project. As of the beginning of March we have 63 producers who have committed to participate in the project by signing the permission forms. The permission forms enable the researchers to have access to the test results from the AHL and the GPS location information from Ontario Pork. Producers are also

asked to give the researchers permission to ask the private veterinary practitioners for clinical disease information to validate survey data but this is unlikely to be used.

To date (March 1st, 2006), there are 38 producers who have completed the questionnaire describing their herd and the movement of pigs, people and supplies in and out of their farms. Of the 38, there are 8 control herds and 30 case herds. There are 6 herds that had PRRS sequences done prior to January 15, 12 cases that had positive PCR tests prior to January 15 but no sequences completed and finally 12 cases that were new cases after January 15.

We will be using the GPS location information from Ontario Pork to map the PRRS positive (case herds) and PRRS negative (control herds). If the barn does not have a GPS location, we can include the barn using the fire number and name of the road and township.

How Do You Participate in the Study?

Contact Dr. Beth Young or Karen Richardson at the University of Guelph
FAX: 519-763-3117
Phone: 519-824-4120 ext 45009 (Karen) or ext 54873 (Beth)
Email: krichard@uoguelph.ca or byoung@uoguelph.ca

Beth will send you a letter describing the project and a permission form for your signature and contact information. Return the permission form to Beth.

Beth will send you a questionnaire that you can complete and then send back to her by mail or she will telephone you to complete the questionnaire. It will take 15 minutes of your time to complete the questionnaire by telephone. If the PRRS virus from your herd has not been sequenced, the project funds will pay for that analysis provided it has been at least one month since the previous sequence was done.

Who Should Participate?

PRRS virus negative herds

We need to have Control Herds – if you have a PRRS virus negative herd we need you to participate. Without control herds, we will not be able to determine how the PRRS virus is spread from farm to farm in Ontario. Owners or managers of control herds will be asked to complete a survey and tell the researchers how they know their farm is negative. (perhaps diagnostic tests have been done and/or there have been no clinical signs of PRRS virus problems).

PRRS virus positive herds

We need all (or most) of the PRRS positive farms in Ontario – it is important that we do not miss PRRS positive farms. Firstly, because we need to describe the variety of types of PRRS viruses in Ontario. Secondly, because we need to see where the links are between these types

of PRRS virus. How common is each type? How does each type spread from one farm to another? What clinical signs are seen with each type?

If you have already had a positive PRRS virus PCR test and gene sequencing done on your herd, we need your permission to use your information. Then you will be asked to complete a survey. The survey can be completed by mail or Beth Young will telephone you to obtain the answers. This will take 15 minutes on the telephone.

If you have already had a positive PRRS virus PCR test but have not had gene sequencing done – we still need you to participate. We will pay to have the gene sequencing done on the virus sample that is in the freezer at the Animal Health Laboratory. To participate, please contact Beth Young who will send you the permission forms that need to be signed. The gene sequencing information will be sent to you and your veterinarian. You will be asked to complete a survey – please indicate to Dr. Young if you wish to provide the information in writing or by telephone.

If you are currently experiencing clinical problems due to PRRS virus, we would like you to participate. Affected pigs or tissues from affected pigs will have to be sent to the Animal Health Laboratory for evaluation. The pathologists will attempt to identify the PRRS virus from these pigs using a PCR test. The cost of these diagnostic tests will be your responsibility. If the PCR test is positive then the research grant will pay to have the gene sequence done on the sample. You will receive a complete report from the pathologists, including the gene sequence information. If you wish to participate in the study and have the project pay for the gene sequence, please contact Dr. Young. Let her know if you wish to complete the survey in writing or by the telephone.

CONCLUSIONS

This research will identify the commonalities between swine units infected with PRRS viruses that have the same or a similar gene sequence. The results will shape management changes in the swine industry to reduce the spread of PRRS virus in our industry.

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