PRRS Virus: Understanding the Spread in the Nursery

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Objective

To determine when the spread of the PRRS virus happens in commercial nursery farms in Ontario

Methods

On 7 commercial farms, 5 piglets in each of 21 litters were individually ear tagged. A blood sample was taken in the first week of life (2 – 6 day old pigs) and then every 2 weeks until the end of the nursery phase (10 – 12 weeks of age). The serum was tested using the PRRS IDEXX ELISA test. Pigs were considered seropositive (positive for PRRS antibodies) if the value of the test was 0.04 or larger. For each pig, the antibody level from one test was compared to the test two weeks later. If the levels increased for two tests in a row, the pig was assumed to be infected 10 days before the first of these tests with the increasing antibody levels.

Results

On average, pigs became infected between 4.4 and 7.1 weeks of age and this was dependent on the farm. Two different patterns of the spread of PRRSv infection were observed on these seven farms. On the five farms that showed a rapid spread of disease, approximately 50% of the pigs were infected between 5 and 7 ½ weeks. By 8 ½ weeks of age, at least 90% of all of the nursery pigs were infected. Two other farms had a very slow spread of disease in the barn. Only 20 to 40% of the pigs were infected by the end of the study period (10 - 12 weeks of age). There was no association found between the use of the PRRS vaccine in sows and gilts, the herd size and off-site production and the spread of PRRS in the farms. However, because there were two very distinct types of spread, it indicates that other herd level management factors impact the spread of the virus in the nursery barn. One factor that was not carefully measured but seemed to be associated with rapid spread was the mixing and re-mixing of pigs in the nursery. Because there were two patterns of disease spread, there will not be one control method that is suitable for all farms.

Take-home message

- In the seven commercial farms studied, pigs tended to be protected against PRRS for the first 2 – 3 weeks of age
- In herds where PRRS spreads rapidly, almost all pigs were infected by 81/2 weeks
- There is not one control program that will be suitable for all farms

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