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Swine Newsletter

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“Load, Close, and Homogenize”

Utilizing a “load, close and, homogenize” protocol to achieve breeding herd stability in farms battling PRRS

Porcine Reproductive and Respiratory Syndrome (PRRS) is a devastating disease that can affect both breeding herds and growing pigs and causes crippling economic losses. Achieving breeding herd stabilization is important in order to maximize production efficiency in sow herds and minimize economic losses in the breeding herd. Breeding herd stabilization is a realistic and achievable goal for swine producers.

Before any disease can be controlled or eliminated from a herd, active circulation of the organism must be stopped! Breeding herd stabilization is defined as, “a breeding herd population where there is no clinical or diagnostic evidence of PRRS virus circulation. This included no evidence of PRRS virus transmission horizontally (sow to sow) or vertically (sow to piglet).” Herds that have achieved breeding herd stabilization have not only stopped the spread of PRRSv within the sow herd but are also weaning PRRS virus negative piglets. The protocol that will be focused on here utilizes the “load, close, and homogenize” procedure using vaccine or serum to initiate the homogenization step of the protocol.

Step 1: Load

This step consists of stocking the sow farm with a gilt supply to maintain inventory and breeding targets during the period of herd closure. These replacement gilts are PRRS field virus negative and will become part of the population involved in the breeding herd stabilization plan within the sow farm.

Step 2: Close the Herd

In this step, the sow farm is closed to all new entries. The farm will remain closed for a length of time that allows uniform population immunity against resident PRRS field virus to be achieved and transmission of resident field virus to be stopped. The length of time required to achieve a uniform stable population can vary depending on various factors present within the herd itself that pose risk to resident PRRSv circulation. Some of these risk factors include size of the herd, farrowing room management protocols, etc. Generally, a minimum of 200 days of closure is recommended. Additionally, closing the herd minimizes the introduction of new PRRS virus strains into the farm while uniform population immunity develops.

Step 3: Homogenize

This step refers to the concept of creating uniform population immunity against the resident PRRS virus in the population. It can be achieved via several strategies.

1. Serum inoculation
2. Feed back – natural exposure
3. Using the MLV vaccine
4. Letting the virus work its way through the breeding herd all on its own (this obviously will take longer and possibly will fail). There is a chance that the herd will not all become sero-positive. But I have used this strategy in situations where the goal was to produce the most pigs possible rather than trying to eliminate or even control the virus. If the weaner and grow-finish pigs are not on the same site it might work.

Serum exposure

- We collect serum from PRRS positive and shedding animals, (usually viremic piglets) during an abortion storm. This serum is “tested” and depending on the numbers of virus particles per ml, we dilute the serum in phosphate buffered saline to an appropriate “dose” to inoculate the entire breeding herd.
- At the time of an abortion storm, I think it is best we use either serum or natural feed back (chopped up lumps from aborted feti or viremic piglets that died). This way we aren’t added a different PRRS strain into the mix at a point in time when the herd is vulnerable.

Vaccine

- The vaccine really is the safest thing to use if the herd is “quiet”. We used the vaccine lot up until about 10 years ago. We realized that herds that had been vaccinated didn’t break nearly as bad as naïve herds when faced with a new strain in most situations
- The vaccine is being used to “sero convert” gilts prior to joining breeding herds in a lot of farms where having an exposed but stabilized breeding herd is desired. The vaccine is considered “PRRS - light” compared to serum, and it gives just as much protection to a new strain as serum does.
- Depending on the goal of the farm, some vaccinate the whole herd every 100-120 days to maintain uniform population immunity over time.

Once the entire herd is free of clinical and diagnostic evidence of PRRS virus circulation, and there is no evidence of PRRS virus transmission horizontally (sow to sow) or vertically (sow to piglet), the herd is considered stable. Stabilization is measured by assessing “due to wean” piglets for the presence of a PRRSv via PRRS PCR. A breeding herd is classified as stable when three consecutive PRRS PCR negative tests sampled 30 days apart, have been obtained from groups of weaned pigs.

It is important to note that maintaining proper biosecurity protocols are vital to achieving and maintaining a PRRS virus stable herd. If biosecurity is poor, it is likely that none of the herd stabilization protocols available will be successful in the long term. Talk to Glenn or myself to discuss herd goals, and the best strategy for your farm. With PRRS, as with so many things, one plan does not fit all situations.

Have a good month,

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