



Professional Nutrition & Management Services

HOG-UPDATE

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This article is a prelude to the discussion at our Production Management meeting on February 15th.

PRRS Virus Update

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History

In the late 1980's the first cases of a previously unrecognized disease was reported in the United States and Canada. The disease presentation included severe reproductive losses and pneumonia in piglets and weaned pigs resulting in dramatic losses and reduction of growth performance. The etiologic agent was unknown and much speculation as to the cause resulted in significant confusion. The syndrome was identified as Mystery Swine disease until a virus was isolated in the Netherlands and North America that fulfilled Koch's postulates. The virus proved to be an envelope RNA virus that has become known as Porcine Reproductive and Respiratory Syndrome Virus.

In 1995 ResPRRS MLV, a modified live vaccine became available in Ontario and has been used extensively to try to control losses associated with PRRS. Prime Pac PRRS vaccine was briefly available and PRRS ATP has more recently been available in Ontario.

The goal of this update is not to dwell on past failures to control and eliminate PRRS virus in Ontario swine farms but to outline some important features of where we go from here. The opinions expressed are those of the author and not necessarily agreed upon facts.

Transmission

Ease of transmission of PRRS virus has been the main reason that pig dense demographics have been very challenging to keep swine herds free of new outbreaks of PRRS. The virus is very stable in cold temperatures and can be effectively transmitted via:

- Pig to pig exposure
- Truck contamination
- Fomites entering the barn
- biting insects
- A.I.
- Aerosol

Infective dose can be very low, however individuals within a population can remain unexposed even in an outbreak situation. The result is a pathogen that is highly infectious but not highly contagious. This split personality is one of the reasons that control of PRRS within a herd is very challenging.

Key Features to Control

1. A requirement of Homologous immunity to achieve full reproductive protection.
2. The elimination of non-exposed sub-populations within the reproductive herd.
3. The elimination of viral challenge to piglets and nursery pigs.
4. More utilization of all-in, all-out pig flow.
5. Good biosecurity to reduce the risk of new outbreaks.

My suggestions to enhance PRRS Control

1. All farms need a method of gilt isolation/acclimatization that occurs in a site other than the Gestation barn. If virus is circulating on a swine farm the gilts must be exposed to that specific virus and allowed at least 60 days to get it, go viremic

and stop shedding before they enter the breeding herd. These goals can be accomplished by using an off-site gilt barn or introduction of younger gilts into finishing flow. In either case, the gilts must get exposure to the farm PRRS strain. This can be accomplished by exposure to viremic pigs or via inoculation of viremic serum or feed back of viremic lung.
NOTE: Cull sows do not tend to shed virus.

2. Management programs to eliminate viral circulation in piglets are very important to PRRS control and elimination.

- 12 hours colostrum intake.
- One cross-foster event to even numbers in the next 12 hours.
- Single day processing (day 3) using duplicated equipment stored in Germex and disinfecting or changing needles between litters as well as potentially wearing gloves and changing them between litters.
- No other piglet movement.
- Euthanize unviable piglets as they present.

These procedures sound severe but they are very effective at eliminating PRRS spread between litters. Once it has been established that viremic pigs are not present at weaning more typical piglet procedures can be resumed.

3. We must be prepared to de-pop nursery barns/rooms to break viral transmission within the weaned pig population. It is imperative that the breeding herd has stabilized and piglets are not circulating virus or the de-pop will fail.

Finally, my opinions on commercial modified live vaccines have changed dramatically over the last year. I think we need to consider PRRS vaccine as mild field strain. I still recommend its use in Gilt acclimatization but am using less and less in breeding herds.

We can effectively get respiratory protection but in my opinion it must be given after the main influence of maternal immunity, more than 28 days of age and have at least 4 weeks from vaccination till field strain challenge or it won't work.

We can eliminate PRRS viral circulation in the breeding herd, piglets and nursery flow. It can be very challenging and very frustrating. It can take a long focused time period. Elimination of viral circulation in these key areas of production needs to be every farm's goal.

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Friday 10am - 4pm

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