

Swine Newsletter

August 2013

- CIRCO VIRUS -

Why We Vaccinate the Sows & Gilts as well as the Piglets

(Summary of a presentation by Dr. Derren Madson, Iowa State University)

- Porcine Circovirus type 2 (PCV 2) is worldwide. There are very few herds without it.
- PCV 2 is one of the three most significant diseases in swine (PRRS, and influenza are the other two).
- If you are not vaccinating the piglets you are probably giving up between \$3 to \$20 per pig marketed.
- Usually occurs in piglets between 7 and 13 weeks of age unless they are vaccinated.
- PCV 2 is not like PRRS or SIV. It causes a long infection. It causes immune suppression. Pigs can be viremic from 4 weeks of age to 200 days! Therefore, affected pigs are more susceptible to other disease and infections.
- There are multiple genotypes of PCV 2. Dual infection is possible.
- The vaccine(s) work. They are effective against the various genotypes and even against mutations. So far!
- Transmission: The major route is feces to oral. PCV 2 is secreted from anything coming out of the pig. Aerosol infectivity is unknown/unproven. Other fomites like needles, insects, and rodents can possibly spread PCV2.
- Sow infection comes from:
 - Other pigs or the environment
 - PCV 2 is a hardy virus that is not killed easy.
 - Sows can be reinfected. Antibodies do wane.
 - New herd additions (gilts) are important for viral survival within herds.
 - Duration of natural immunity is out to 18 months, possibly longer.
- Sows pass on infection to piglets if they are viremic
 - PCV 2 crosses the placenta to the fetus
- Also, sows colostrum and milk can spread PCV 2 to the piglets. It can be shed in milk for at least 4 weeks.
- By vaccinating boars, semen is a low risk of PCV 2 transmission

Outcome of fetal infections:

Stage of Gestation	Clinical Presentation
Early (1-35 days)	<ul style="list-style-type: none">• Embryonic death• Irregular returns• Pseudo pregnancy• Small litter size
Mid (35 – 70 days)	<ul style="list-style-type: none">• Mummified feti• Abortion
Late (70 – 115 days)	<ul style="list-style-type: none">• Still births• Weak born piglets• Delayed farrowing• Normal litters• Abortion

- Looks a lot like Porcine Parvo Virus infection
- Associated reproductive failure is most commonly in naïve dams. Therefore gilt vaccination becomes important!

- Dr. Madison estimates that 10% of all reproductive failures are due to PCV 2. In his own study at Iowa State University, between 2003 and 2010, there were 501 swine reproductive failure cases. 12% were associated with PCV 2.
- How do we diagnose PCV 2 associated reproductive failure?
 - Submit at least 4 fetuses to the lab.
- PCV 2 in utero infections are much more common than we suspect. All parities are affected, not just gilts. There are no clinical signs. There may be a few weak, low survivable piglets in the litter. Dr. Madison's research showed that 17 to 71% of piglets born in non-vaccinated sow herds, have already been infected by PCV 2 before they were born. That's a 44% overall infection rate during pregnancy!
- Last year, Dr. Madison repeated the same study only the sows had been vaccinated and the infection rate dropped to 1%
- The significance: Piglets are more likely to become sick with some/any other bug. Their mortality rate is higher.
- How do we prevent this?
 - Vaccinate the sow before breeding her!
- What is the benefit of vaccinating the sow:
 1. Primary effects – it helps the sow
 - reduce viremia
 - reduce PCV 2 associated reproductive failure
 - reduce colostrum and milk shedding
 2. Secondary effects (based on 415 herds)
 - Decrease wean to service interval, decrease sow mortality, decrease pre weaning mortality
 - Increase weaned pigs/sow, increase weaning weights, increase farrowing rate

A couple of extra things:

- They think that this indicated that there is a subclinical PCV 2 infection in the breeding herd of pretty much all non-vaccinated sow herds.
- Research is looking into the suspicion that there is decreased performance in herds originating from non-vaccinated breeding herds downstream. I.e. if your dams aren't vaccinated, their gilts don't perform as well and the piglets that go to the finisher barn don't gain as well.
- ** What is the proper timing of vaccination
 - You need to vaccinate incoming gilts.
 - Obviously this should be before breeding.
 - Boosting the initial vaccine 2 to 3 weeks later is important.
 - Sows should be vaccinated pre breeding, not pre farrowing!
- If you vaccinate the sow before farrowing, then the colostrum will contain very high antibodies against PCV 2. This protection will last into the weaning stage and will interfere with the response the piglets have when they are vaccinated (maternal antibody interference)
- I suggest giving the vaccine to the sows on the Monday before you wean them.
- The sows should be vaccinated yearly but for ease of management, giving it routinely at or just before weaning is probably the way to go.
- If you are really organized then giving it to all the sows before weaning from Jan. 1st to June 1st will suffice (this will get all the sows once a year). Of course you would still vaccinate all new gilts twice before breeding all year long. My fear is that once vaccinating is discontinued in June, a lot of managers will forget to start it again in January!

I will write up the take home message of the above for next month's newsletter.

Have a nice August.

Reg