



Vaccinations for pigs: should I jump on the Circovirus 2 bandwagon?

**Charles T. Estill, VMD, PhD
Oregon State University Extension Veterinarian**

What is porcine circovirus?

Two strains of porcine circovirus, a small DNA virus affecting swine, can infect pigs. The first strain, porcine circovirus type 1 (PCV1), has not been found to cause any disease in swine. The second strain, porcine circovirus type 2 (PCV2), is significantly different from PCV1 and has been found to infect and cause disease in pigs. Porcine circovirus disease (PCVD) is the term for a viral disease of pigs that has recently emerged as a major problem in the US. While a majority of swine farms today have positive results in blood tests for PCV2, only a small percentage actually show signs of having a disease associated with the virus. While there is a strong link between PCV2 and various disease syndromes, there are other environmental and management conditions that contribute to disease manifestation.

How prevalent is PCV2 in swine?

While most swine are infected with PCV2, only a small portion of pigs show signs of the disease. It is important to note that while most pigs are INFECTED with PCV2, only a percentage of pigs become AFFECTED with clinical signs.

What diseases are associated with Circovirus 2?

In the late 1990s, circovirus was reported in clinical cases of a wasting syndrome that affected multiple organ systems in weaned pigs (hence the name and acronym, "post-weaning multisystemic wasting syndrome," PMWS). Since that time, evidence has continued to mount that PCV 2 may cause the syndrome. Although infection with the virus alone causes little or no clinical signs, infection together with parvovirus, a common virus circulating in pig herds, has been shown to cause a wasting syndrome quite similar to that in reported clinical cases. There is also the potential that PRRS virus infection may increase susceptibility to PCV 2 infection.

Poor growth, increased mortality, and weight loss progressing to emaciation in pigs between the ages of 5 and 18 weeks are the most common clinical signs. Other clinical signs include enlarged lymph nodes, difficulty breathing, jaundice, fever, stomach ulcers, diarrhea, and sudden death. Generally, fewer than 5 percent of pigs in an affected herd show clinical signs but morbidity and mortality can reach 40 percent. Most pigs that show signs of the disease do not recover or respond to treatment.



Affected farms will generally see a combination of anorexia, diarrhea, rapid weight loss, respiratory problems, and skin discoloration in the pigs. These symptoms will result in unthrifty pigs with an increased rate of mortality.



What can I do to reduce losses from Circovirus 2?

Because of the increased prevalence of PCVAD in the United States, the National Pork Board and the American Association of Swine Veterinarians recently teamed up to produce a brochure that provides recommendations that can reduce the effects of PCVAD. The appearance of PCVAD is often associated with environmental stress on the pigs. The following is a brief summary of some of their recommendations to reduce these stressors and minimize the impact of PCVAD.

- Practice strict biosecurity, controlling the movement and exposure of pigs, people, and rodents.
- Thoroughly clean and disinfect barns between groups of pigs using an effective disinfectant, and allow time for drying before moving in the next group of pigs.
- Pay attention to the environment. Keep rooms and buildings at the proper temperature for the age and size of the pig. Also, reduce humidity and check ventilation systems to ensure good air quality.

- Practice all in/all out animal flow, and avoid resorting, mixing, or moving pigs after placement.
- Provide adequate space, minimize overstocking of pens, and remove affected pigs if they do not respond to treatment.
- Implement a herd health program that minimizes Mycoplasma and bacterial coinfections.
- Closely manage your operation to minimize stressors, such as out-of-feed events.

Remember, if you suspect PCVAD on your farm, you should consult your veterinarian and confirm the diagnosis through laboratory testing.

Are effective vaccines available?

A PCV2 vaccine for use in sows and gilts has been available in France and Germany for about two years. In one study from the first country, the weaning to slaughter mortality rate dropped from 11.0% to 7.7% in 15 herds where the vaccine was used. In the second country, the birth to slaughter mortality rates in 38 herds where the vaccine was used dropped from 28.7% to 17.9%. In each of these studies the results were compared before and after the use of the vaccine, so it could be that in some herds the performance might have improved in the absence of vaccination. Nevertheless, the information from several French practitioners suggests that the vaccine is frequently useful to prevent losses associated with PCVAD.

Similarly, results obtained in Canada and the US with pig vaccines, both commercial and experimental, suggest that these vaccines are efficacious. The field information gathered to date indicates that losses have been reduced by about 50% in some cases, while in others a total elimination of PCVAD losses has been observed. In fact, in Quebec, there are even situations where the performance after vaccination appears to be better than it was before the PCVAD outbreak. This would tend to suggest that in the past some losses may have been associated to PCVAD without being recognized as such.

There are now licensed PCV2 vaccines in the US and preliminary reports from veterinarians and producers indicate promising results. Two available vaccines are:

Suvaxyn PCV2 by Ft. Dodge is a one dose product used for the vaccination of healthy pigs 4 weeks of age or older as an aid in the prevention of Porcine Circovirus Type 2 (PCV2) viremia and aid in the control of lymphoid depletion caused by PCV2.

Ingelvac CircoFLEX by Boehringer is a single dose porcine circovirus vaccine that can be administered to pigs 3 weeks of age and older to help prevent PCVAD. Ingelvac CircoFLEX aids in the reduction of lymphoid depletion, inflammation and colonization of lymphoid tissue, viremia and nasal shedding of virus associated with Porcine Circovirus Type 2 (PCV2).

Should I be vaccinating?

If you have experienced problems in the past due to Circovirus 2 then vaccination may reduce future losses. It is important that a firm diagnosis be established before beginning a vaccination program. Work with your veterinarian and diagnostic lab to establish a diagnosis. Just because your pigs are positive for Cicovirus 2 on a blood test does not mean that the virus is causing losses. Generally, only when Circovirus associated disease is diagnosed and presence of virus confirmed should vaccination be considered. Additional indications for vaccination include high-risk animals or very valuable stock. Remember, that stress reduction through proper housing, nutrition, and biological risk management form the cornerstones of pig health.

For more information go to:

National Pork Board and American Association of Swine Veterinarians Swine Health Fact Sheet
www.pork.org/porkscience/documents/circovirus.pdf