



An interview with  
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# toolbox

## Staying ahead: Zoetis adds more PCV antigen to its Fostera® PCV vaccines

**Q:** Fostera® PCV MH vaccine has been used successfully in the US pork industry since 2013. Zoetis recently increased the PCV antigen level in the vaccine and its monovalent product, Fostera PCV MetaStim. How does the vaccine perform against the most common circulating PCV genotype?

**LG:** Yes, we conducted a controlled challenge study to test the efficacy of Fostera PCV MH against PCV2d — the most predominant PCV strain based on genotype sequencing on samples submitted to Iowa State's Veterinary Diagnostic Laboratory.<sup>1</sup> We believe the study, which involved over 100 pigs per test group, is the most robust study yet involving this PCV genotype. Pigs were vaccinated with one of two recommended regimens: one 2-mL dose of Fostera PCV MH at 3 weeks of age or with two doses — 1 mL at 3 weeks of age followed by a second 1-mL dose at 5 weeks.

**Q:** Did the study mimic real-world conditions?

**LG:** Yes — and then some. We used commercial pigs raised in a commercial-like environment. They had H1N2 and H3N2 swine influenza and *Streptococcus suis* — two diseases not uncommon in herds with PCV. We administered the PCV2d challenge intranasally and with an intramuscular injection. We also challenged the pigs with *Mycoplasma hyopneumoniae* 1 week before the PCV challenge. We also allocated the piglets to test groups based on litter so that maternally derived antibodies would be equally distributed.

**Q:** Was the vaccine effective?

**LG:** Both Fostera PCV MH vaccine regimens yielded significantly lower viremia ( $p \leq 0.05$ ) compared to unvaccinated, challenged controls. The level of viremia, for instance, which is the level of virus in the blood, was measured by polymerase chain reaction cycle threshold times. Viremia declined over time and this indicates the vaccine is working.<sup>2</sup>

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**Q: Has the increased antigen compromised the vaccine’s safety?**

**LG:** No, not at all. In our test, there were no injection-site reactions with the one-dose regimen of Fostera PCV MH and only 0.9% injection-site reactions with the two-dose regimen.<sup>2</sup> This didn’t come as a surprise given the vaccine’s history. In a previous trial, pigs receiving Fostera PCV MH had a much lower incidence ( $p \leq 0.05$ ) of injection-site reactions compared to a competitive vaccine, which also caused more-severe and longer-lasting injection-site reactions.<sup>3</sup>

**Q: How should producers go about selecting the right PCV vaccination program?**

**LG:** It depends on producer preferences, facilities and labor resources. The one-dose or two-dose regimens are both effective if properly administered. With two doses, however, there’s a greater chance that all pigs get vaccinated, and a second dose tends to help boost immunity.

**Q: What else can producers do to ensure good protection against PCV2?**

**LG:** Virtually any vaccine can be overwhelmed if there’s a high environmental load of the pathogen it’s intended to help prevent, so maintaining good biosecurity is essential. It’s also important not to take shortcuts and adhere to the basic vaccination rules. Make sure vaccines are stored and handled correctly and don’t get contaminated. Make sure vaccination crews administer the vaccine correctly, use the full recommended dose and vaccinate all pigs. The more you pay attention to details, the more effective your vaccination program will be.

**Q: So, in summary, what can veterinarians and producers expect from this higher-antigen vaccine?**

**LG:** We expect Fostera PCV MH will help provide good protection against the PCV strains circulating — including PCV2d — especially if the vaccination program is coupled with proper vaccine handling, administration and biosecurity.

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## toolbox

Toolbox is a series of interviews with veterinarians about their experiences managing antimicrobials, vaccines and other tools for swine health. It is produced by the editors of *Pig Health Today*<sup>®</sup> on behalf of the US Pork Business of Zoetis.

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<sup>1</sup> Xiao C-T, et al. PCV2d-2 is the predominant type of PCV2 DNA in pig samples collected in the US during 2014-2016. *Vet Microbiol.* 2016 Dec;197:72-77.

<sup>2</sup> Data on file, Study Report No. 16PRGB10-01-01, Zoetis Inc.

<sup>3</sup> Nitzel G, et al. Safety of Fostera PCV MH vs Other Combination Vaccines. Allen D. Leman Swine Conference, Recent Research Reports, Volume 42, 2015, College of Veterinary Medicine, University of Minnesota.