

Dr. Susy Caman and
Dr. Robert Friendship

PCVAD vaccination produces 'remarkable results'

That's the conclusion of researchers conducting field trials into vaccination against a new and more severe form of porcine circovirus. But many questions remain

by MARY BAXTER

In the fall of 2004, the arrival in Canada of a newer and much deadlier version of porcine circovirus (PCV) began to cause serious harm to Ontario swine herds. By then, it had been a well-established fact that PCV could be found on every farm, but for the most part it was an insignificant problem. The new version of PCV-associated disease (PCVAD) caused high mortality in pigs, generally in the 14 to 16-week age range.

Researchers at the University of Guelph carried out surveys to determine the prevalence of the problem during the summer of 2005 and followed up by conducting interviews with veterinarians and industry experts regarding control measures. A wide range of intervention strategies were employed, often quite costly but for the most part ineffective until the first vaccines were introduced under emergency licensing procedures.

The University of Guelph researchers have been involved in conducting controlled field trials, as well as monitoring herds where vaccination was introduced. "Results have been remarkable," says Bob Friendship, a professor with the university's Ontario Veterinary College department of population medicine.

In a trial where every other pig was vaccinated, the mortality of vaccinated pigs (from weaning to market) was 1.5 per cent compared to 4.5 per cent for the controls, he says. Historically, mortality averaged nine per cent in the particular herd where the research trial was conducted. "Quite clearly the vaccines have been very successful," he says. "But there are many questions still unanswered."

One question is why some herds broke with the new severe problem and others didn't. The general view is that a new more virulent form of the virus was introduced. Dr Susy Caman and workers at the Animal Health Laboratory were able to show, using a molecular technique, that the PCV found in cases beginning in early 2005 were consistently different than the viruses found previously.

The University of Guelph researchers conducted a case-control study to determine if this could explain the reason why some herds are not seeing the severe version of the disease. Surprisingly, they found the new version of the virus both in case farms (those herds that suffered high grower-finisher mortality) and those farms that had observed no sign of the disease. Therefore, the answer appears to be more complex.

Friendship says that the researchers continue to try to unravel this mystery by using a large number of herds and determining the presence of risk factors. "If we are successful this information might lead to ways to control the disease without the cost of vaccine and might increase our understanding of how diseases interact," says Friendship.

The long-term goal is to apply this knowledge to make our pig population healthier and safer, he adds.

Sponsors for this research have included Ontario Pork, Intervet Animal Health, Ontario Pork Industry Council and the University of Guelph-OMAFRA Sustainable Production Systems Research Program.