

Prevalence of PRRS Virus in the United States

Porcine Reproductive and Respiratory Syndrome (PRRS), a pathogen that was unrecognized 10 years ago, has dominated pork industry health concerns around the world.

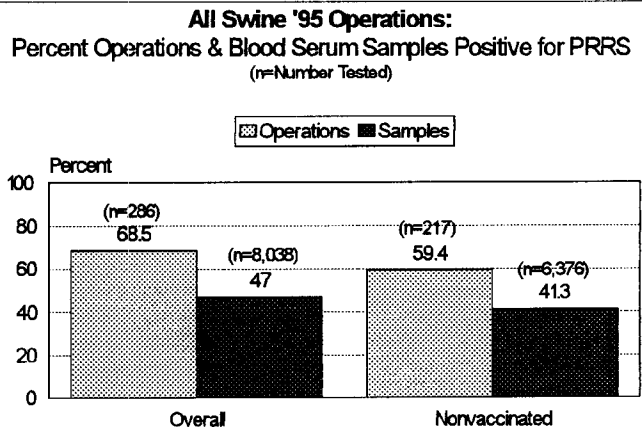
The PRRS virus is widespread in the United States, Europe, and Asia. First referred to as Mystery Swine Disease, research scientists have uncovered many clues as to how the virus effects the pig and made strides regarding diagnosis and control of this pathogen.

The PRRS virus may exist in a herd and not be apparent to the producer. Or it may make a more dramatic entrance into a herd causing late-term abortions, preweaning mortality approaching 80 percent, a drop in piglets born alive, and other reproductive problems that may persist for months. In the grow/finish phase, there may be increased mortality and decreased feed efficiency and average daily gain. Because of its ability to weaken a pig's defense mechanisms in the lung, the PRRS virus is often associated with multiple concurrent infections, such as swine influenza virus and mycoplasma.

Producers participating in the National Animal Health Monitoring System (NAHMS) Swine '95 study had the opportunity to submit up to 30 blood samples from gestating animals and finishing hogs to be tested for antibodies to the PRRS virus. No more than 15 samples were to be collected from gestating animals with the balance of the samples being collected from late finishers.

A total of 8,038 samples were collected from 286 producers who submitted blood samples to the

Figure 1



#3417

USDA's National Veterinary Services Laboratories (NVSL) for detection of antibodies to the PRRS virus using the IFA test. Slightly more than 75.9 percent of the operations did not use PRRS vaccine with 6,376 (79.3 percent) of the samples coming from nonvaccinated animals.

Overall, 196 (68.5 percent) of the operations had at least one blood sample with titers for PRRS virus (Figure 1). The percent of samples positive for nonvaccinated animals was 41.3 percent. Of the 217 farms not using vaccine, 129 (59.4 percent) had at least one positive animal.

Breeding Herd

Two hundred and twenty-eight (228) operations submitted 3,281 samples from gestating sows and gilts. Over half (57.5 percent) of the operations had at least one positive sample (Figure 2 on the next page). The total fell to just under half (47.7 percent) for farms with no vaccinated females. This percentage was higher than the farm prevalence from NAHMS 1990 National Swine Survey, where 35.7 percent of the operations had a positive sow for PRRS. In that study a maximum of 10 sows per farm were tested.

With a maximum of 15 sows per farm tested, the 1995 study was more likely to identify a positive operation.

Almost one-third (31.8 percent) of the gestating female samples had positive PRRS titers. Since the breeding herd is one of the primary reservoirs for virus circulation on a farm, stabilizing the breeding herd is critical to controlling PRRS.

The PRRS vaccine was not approved for vaccine use in sows and gilts at the time of the Swine '95 study, however one-fourth (25.9 percent) of the 3,281 samples collected from gestating females were from vaccinated animals. Of the 2,359 samples collected from nonvaccinated females, nearly one-fourth (23.5 percent) were positive for PRRS.

The average proportion of positive samples within a breeding herd was 31.3 percent of females. On 12.3 percent of the operations, all of the samples from gestating females were positive. **The average proportion of breeding animals positive on an operation dropped from 33 percent in 1990 to 24 percent for nonvaccinated females in 1995.**

Finishing Herd

Two hundred and eighty-four (284) operations submitted 4,756 samples from finishing pigs. For those operations which had no vaccinated finishing pigs (254), 58.7 percent had at least one positive sample (Figure 3).

Over half (57.5 percent) of the finishing herd samples had positive PRRS titers. The finishing herd is a common location for virus circulation on a farm. PRRS infection on the finishing floor often persists even after clinical disease due to PRRS has subsided from the breeding herd; thus, it is not surprising to find the prevalence of PRRS in finishers nearly twice that of the breeding herd.

Of the 4,016 samples collected from nonvaccinated finishers (84.4 percent of finishing pig samples), over one-half (51.7 percent) were positive for PRRS.

Figure 2

Swine '95 Operations with Gestating Females:
Percent Operations and Blood Serum Samples Positive for PRRS
(n=Number Tested)

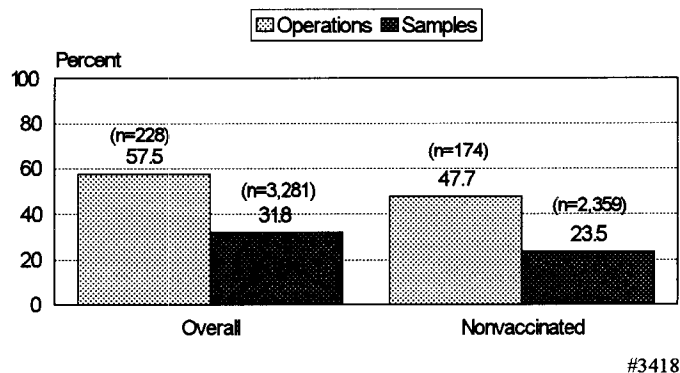
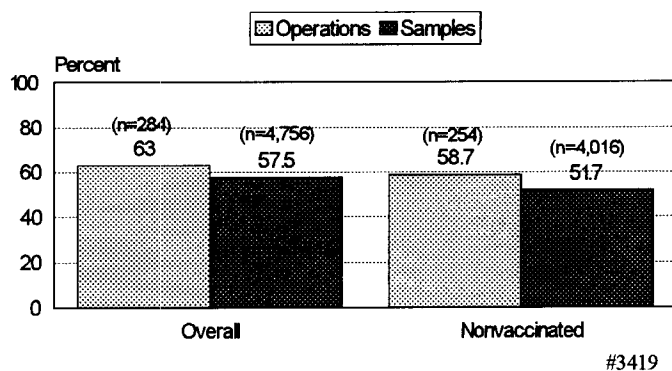


Figure 3

Swine '95 Operations with Finishing Pigs:
Percent Operations and Blood Serum Samples Positive for PRRS
(n=Number Tested)



The average proportion of positive samples within a finishing herd was 54.8 percent of finishing pigs. On 39.8 percent of the operations, all of the samples from finishing pigs were positive.

NAHMS collaborators on the Swine '95 study included the National Agricultural Statistics Service (NASS), National Veterinary Services Laboratories (NVSL), and State and Federal Veterinary Medical Officers and Animal Health Technicians.

For more information, contact:

Centers for Epidemiology and Animal Health
USDA:APHIS:VS, attn. NAHMS
2150 Centre Ave., Bldg. B, MS 2E7
Fort Collins, CO 80526-8117
(970) 494-7000

E-mail: NAHMSweb@aphis.usda.gov
<http://www.aphis.usda.gov/vs/ceah/cahm>