

Venereal Transmission of Pseudorabies Virus Among Wild Swine

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Pseudorabies virus (PRV) is common among wild swine populations throughout the southeastern United States, but actual disease has not been reported. In contrast, pseudorabies (also called Aujeszky's disease) has caused economic havoc in the domestic pork industry due to abortions, weak piglets, and pneumonia. Substantial progress has been made toward elimination of PRV in domestic swine, and once this happens, wild swine will be the last reservoir for PRV in the United States. Therefore, it is important to know the risk of PRV transmission from infected wild swine to clean domestic swine. This information has application to maintaining PRV-free domestic swine populations and in convincing other nations that our exported domestic swine and pork products do not pose risks in foreign trade.

Before such risks can be defined, a clear understanding of the epidemiology of PRV in wild swine populations is needed. PRV in domestic swine herds normally is transmitted by aerosol, particularly in swine herds that are confined to indoor facilities. However, when researchers at both the University of Florida (UF) and SCWDS tried to isolate PRV from nasal passages and tonsils of seropositive wild swine, they were unsuccessful. This frustrating problem was not resolved until researchers at UF isolated the virus from the genitalia of steroid-stressed wild swine held in captivity. They subsequently demonstrated that most viral shedding in wild swine is associated with the reproductive tract, not the respiratory tract. This was especially true for boars where high amounts of virus were obtained from the prepuce for several consecutive days. Additionally, it was shown through trials with wild swine in captivity that PRV is transmitted by sexual contact and not "casual contact."

This experimental work agrees with SCWDS field studies on Ossabaw Island, Georgia. Early on, it was observed that transmission of PRV in wild swine on Ossabaw was associated with the peak breeding season in the fall and that sexually immature pigs were rarely infected. In order to determine the extent of natural viral shedding in this population, nasal passages and genitalia were sampled for virus isolation from over 600 adult wild swine. From these samples, six PRV isolations were made, all from the reproductive tract. As with the experimental data from UF, most of the isolations came from boars. These results provide further evidence that the virus is maintained in a venereal cycle in wild swine. An additional argument for venereal transmission of PRV in wild swine is the low number of cases observed in domestic swine herds in the Southeast during the eradication program.

The likelihood that PRV transmission from wild to domestic swine requires sexual contact is good news for swine producers. Sexual contact between wild and domestic swine is much more readily prevented than through-the-fence aerosol transmission. At present, there are no prospects for eliminating PRV from wild swine. However, if domestic swine producers will build strong fences and not allow their animals to mingle with wild swine, it appears that the risk of PRV spillover from wild to domestic swine will be minimized.