

Kansas Agricultural Experiment Station Research Reports

Volume 0
Issue 10 *Swine Day (1968-2014)*

Article 170

1977

Pseudorabies

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Recommended Citation

Schoneweis, D A. (1977) "Pseudorabies," *Kansas Agricultural Experiment Station Research Reports*: Vol. 0: Iss. 10. <https://doi.org/10.4148/2378-5977.6010>

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Pseudorabies has been talked and written about so much the last few years that it seems that there isn't anything left to be said. It may be that so much has been said about the disease that now is the time to review the disease as it relates to Kansas swine producers.

First of all, I'd like to discuss briefly two factors that need to be clarified: (1), pseudorabies is not to be confused with rabies--there are no recorded instances of humans being affected by the virus; and (2), pseudorabies is not a new disease. First reported in scientific literature by Aujeszky in 1902, Aujeszky's disease is one of its synonyms. A review of the literature published in this country suggests that pseudorabies has been a problem at least as far back as 1813. It has now become a big problem in the swine industry.

Pseudorabies is caused by a herpes virus. A fairly resistant virus, it can persist in bedding for 10 days at 75°F. or for 30 days at 65°F., and on a wooden floor for 7 weeks. It can survive for 6 months at 38°F. The virus can be destroyed by most disinfectants if properly applied.

The virus is highly fatal to domestic animals other than swine; in many cases it has been passed from swine that have shown few, if any, signs of the disease. Many wild animals, such as raccoons, foxes, skunks, and rats, may be incriminated in the spread of the virus from farm to farm.

So much for history--let's look at pseudorabies in swine. The virus can affect swine of all ages in many different ways. It is most spectacular in the sow at the time of farrowing and in the neonatal pig.

Clinical signs in sows include abortions, which often occur early in pregnancy; death of fetuses produces mummies, and consequently signs often resemble those of SMEDI. Another clinical entity often noted is an atypical pneumonia. Sows may run a fever, go off feed, cough, and possibly vomit.

Newborn pigs may show signs similar to those of TGE, in that they may vomit and show diarrhea and their temperatures may be as high as 105°F. Depression, trembling, incoordination, spasms, and coma develop rapidly, with death occurring within 36 hours after the first signs of illness. The death loss may approach 100% in the newborn pigs.

The mortality rate is not so high in 2 or 3 week-old pigs, but many do die after showing signs similar to those noted in newborn pigs.

Feeder pigs may show signs of the atypical pneumonia, as seen in sows, or of CNS--including listlessness, temperature increase to 106° or 107°F., vomiting, and tremors of tail and flank. By the fifth day nervous signs become more pronounced, with many similar to those noted in sodium ion toxicity (salt poisoning or water

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deprivation syndrome); an affected pig then will raise its head, arch its back, appear to lose its balance, pivot in a circle, and fall on its side. After paddling for a short time, the pig stops convulsing, relaxes, and tries to get up. The convulsion will probably reoccur in a few minutes.

The diagnosis of pseudorabies is not easy, as it can manifest itself in many different ways and the signs I have mentioned are indicative also of other diseases. Laboratory confirmation is necessary to make a positive diagnosis. In procedures currently used at K-State we grow a culture of the virus, do a fluorescent antibody or serum-neutralization test, or inoculate the affected animal. The serum neutralization test is used more than the other. It is quite accurate if not used too soon after the pig has been infected, but is not always able to detect the carrier animal in that a pig may not show a titer but still harbor the virus.

There is no known treatment for the disease. Most adult animals recover, but a young pig cannot be treated satisfactorily once it begins to show signs of pseudorabies.

The control of pseudorabies is difficult because the virus can be spread by pigs that show no signs of the disease and by wild animals. The ability of the virus to exist in the environment for various periods of time further complicates control.

Some recommendations for preventing the establishment of the disease in a herd include the following:

1. Closed herd - An infected pig is still

the worst enemy that another pig can have, and the asymptomatic carrier has to be the number one suspect in an outbreak. Keep the addition of new animals to a herd to a minimum. When buying stock, buy from a herd whose history you know, and use a serum-neutralization test as a check. Place the purchased pig(s) in quarantine for 3 or 4 weeks and retest before adding the pig(s) to the herd. A pig that tests negative has to be free of pseudorabies, right? WRONG!!! We have mentioned that a pig can be carrying the virus and still have a negative titer. It is not likely, but don't put absolute faith in a blood test.

While we are under the big umbrella of the "closed herd", let me open up a couple of areas of controversy. I believe that one of the dumbest (I usually use a stronger adjective) things a producer can do is to take a pig to a fair and then bring it back home and add it to the herd. I firmly believe that we will lessen the incidence of several problems, including pseudorabies, when we have only market classes at fairs. So much for the first sacred cow--now to the second.

I think that anyone who buys a pig from a group of pigs that have been brought together from various sources is taking a chance of bringing home pseudorabies, as well as other diseases. We have mentioned several times that the SN test is not infallible, so do not assume that nothing can happen to the pig with a

negative SN. I do not feel so strongly about obtaining a pig from a test station because the pigs there have been together long enough to be more like a herd. Yet it is quite valuable to know the herd history and to obtain an SN test on all pigs one anticipates placing in his own herd.

2. Rodent and wildlife control - It is well documented that pseudorabies can be spread through wild animals. Needless-to-say, controlling affected rats, as well as skunks, raccoons, or other wild animals, is difficult.
3. Vaccination - This is a controversial subject, to say the least. Currently two products are being used in parts of the United States in an attempt to produce an active immunity: the modified live vaccine, which can be used in Kansas with the permission of the state veterinarian; and the oil-inactivated vaccine. Both products are of value in controlling pseudorabies, but both produce titers, making it impossible to determine if it is an outbreak or just a vaccination titer. There is no easy answer to this problem.
4. Eradication - I probably should not even include this in a discussion of methods of control because I personally consider eradication impossible. Any comparison between our apparent success in eradicating hog cholera and our attempt at eradicating pseudorabies is difficult as there was no problem with a reservoir of infection other than swine when the hog cholera-eradication program was initiated.

Pseudorabies is not a serious statewide problem at present. I trust that we can keep it at a minimum by using some common sense as we work with swine. I imagine, however, that we are going to see more of it in feeding operations as pigs continue to be moved into these facilities, though that will not create a serious economic problem. I believe that the producer who has a farrowing operation is the one who must use some rather restrictive management measures to try to prevent the virus from entering his herd.