AG FACTS

KSU
KANSAS STATE UNIVERSITY

Cooperative Extension Service

Atrophic Rhinitis (AR)

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Atrophic rhinitis (AR) is a condition in swine that causes a deterioration or complete destruction of the scrolls or turbinates and the septum of the nose. As a result, the nose or snort is deviated or twisted to one side; or may be turned up; or may appear to be normal with only an extra wrinkle.

In recent years there has been a great increase in the number of herds that has been infected.

Causes

The two major bacterial agents responsible for AR are Bordetella bronchiseptica and Pasteurella multocida (Type A and Type D). The Bordetella germ, as well as pit gases or other irritants, insults or injures the lining of the nose. This allows the Pasteurella multocida type D to grow and produce a toxin which destroys the bone turbinates. Pasteurella multocida type A, which normally causes pneumonia, may also cause AR.

It is not known for sure if these agents are the primary cause of AR or are a secondary cause. What causes AR on one farm may not be the causative agent on the next. More research is needed. Consult your veterinarian for an accurate diagnosis and treatment.

How It Spreads

The most common way for AR to be spread is by a "carrier" animal. This is an animal that may not show any sign or symptoms of AR, but is carrying the Bordetella organism in their nose. This bacteria is spread by aerosol movement from the nose. Baby pigs must be infected during the first several weeks of life to develop symptoms. A carrier sow in a farrowing crate breathing on the newborn piglets is an excellent way to spread and infect piglets.

The Bordetella organism is also carried by cats and rats. Cats that live in the farrowing house and sleep under the heat lamps with the baby pigs should be discouraged!

It is not unusual for a swine producer to be unaware of AR in his herd, but upon selling feeder pigs, these pigs may develop AR in a short period of time. This is mainly due to the good management practices on the first farm. Namely, good environment, well-balanced ration and the possible feeding of antibiotics and sulfa drugs. These factors may reduce or mask the underlying AR problem. Any change in management procedures and the stress of moving the feeder pigs may account for the AR to express itself.

Symptoms

An excessive amount of sneezing by the baby pig in the farrowing house or nursery should alert the producer to the possibility of AR. Darkened tear stain areas below the eyes are common. The darkness is due to dust and dirt collecting on the moisture produced by the tears. Finding a few drops of blood on the floor or seeing blood dripping from the nose are common symptoms. Deviations of the snort may occur anytime after 4 weeks of age. It usually takes 2-3 farrowings for AR to really show up in a herd.

It is a good idea to post any pig that dies. Be sure to cut across the snort behind the needle teeth with a hack saw. Examine the turbinates. Are they firm and feel like bone; is there some inflammation around them? On baby pigs less

than 4 weeks of age, you may not find too many changes. After 6 weeks of age, they should be very apparent. Upon examining older pigs, if it looks like you are looking down the business end of a twelve guage shotgun, you are in serious trouble.

Effect on Health of Infected Pig

AR may partially or completely destroy the turbinates (scrolls) in the nose. The turbinates act as a filter to prevent bacterias, dirt and dust from entering the lungs. They also warm the cold outside air so that it doesn't shock the body systems. If these turbinates are destroyed, it allows the bacterias, dust and cold air to enter the lungs and usually results in some type of pneumonia. These are extremely difficult to treat as there is a continuous movement of bacteria and dust into the lungs. Other effects of AR may be pigs that do poorly and reduced feed efficiency. Some pigs with severely twisted snorts may not be able to eat very much. Some severely affected pigs may grow as rapidly as an apparently healthy pig.

Prevention

There is no way that is 100% effective in preventing AR from getting into your herd. Buying and raising SPF stock is the most effective method. Some of the more practical preventative measures are:

1. Maintain a closed herd
2. Buy SPF boars
3. Keep cats out of farrowing house
4. Feed a well-balanced ration
5. Addition of sulfa drugs and antibiotics to ration
6. Prevent stress on young pigs–warm, dry, draft-free environment
7. Vaccinate with a federally approved AR vaccine. Vaccines cannot be used in SPF herds.
8. Restrict visitors
9. Adequate ventilation
10. A good worming program reduces lung inflammation
11. Keep replacement gilts from older sows

Control

The following steps are necessary to help control AR in a herd. First, contact your veterinarian and have him do the following:

1. **Swab** noses of several 4-12 week old pigs. May need to sacrifice several pigs and swab further back in the nasal cavity to get the best results.
2. Send swab to diagnostic lab for **culturing.**
3. **Identification** of organisms involved.
4. **Sensitivity** test to determine the proper drug and also to see if the Bordetella organism is resistant to sulfa drugs.

By doing these steps, you will have a better idea as to what is causing the AR problem and will be better prepared to take control measures. Any program initiated will not eliminate AR, but should reduce the incidence and severity so that you can live with it.

If the causative organism is sensitive to sulfa drugs, then it should be incorporated into the ration during the last 2-3 weeks of gestation. This will help to reduce the number of organisms that the infected sow will breathe on her and surrounding litters. The feeding of sulfa drugs to the sow should continue till she is weaned. Sulfa drugs should be in the growing pig's ration from weaning to about 100 pounds. In severe cases, it may be necessary to continue the sulfa drug longer. Be sure to observe the withdrawal time of 15 days for sulfa drugs. It maybe necessary to feed sulfa and antibiotics, even though the organism is resistant to sulfa, to help hold down the secondary bacterial infection.

In recent years, there has been a great increase in the number of farms on which the Bordetella organism is resistant to the sulfa drugs. This is making it more difficult to control the AR on many farms.

Vaccination

The use of a federal approved AR vaccine has helped to reduce the incidence and severity of AR. Most of the vaccines on the market contains Bordetella bronchiseptica and Pasteurella multocida type A and type D. These are essential. Follow the directions on the label. Some recommend vaccinating the sow or gilt 4 weeks and 2 weeks before farrowing. Their piglets are vaccinated at 7 and 28 days. Repeat at each farrowing. One commercial vaccine is given twice to the sow or gilt before farrowing and one injection to the piglets at 3 to 4 weeks of age. The theory is that by vaccinating the sow twice before farrowing she will pass antibodies in her colostrum and milk to protect her piglets until they are vaccinated at 3 to 4 weeks of age. Any vaccination program will need to be continued indefinitely. Don't expect immediate results. It may take several months.

Should I Depopulate— Repopulate?

Repopulation is expensive and it is no guarantee that you won't buy back AR, unless you get SPF stock.

If you cannot control the AR with drugs, vaccines and management and it is causing a tremendous financial burden, then you should consider depopulating.

After total depopulation, clean and disinfect buildings thoroughly. Leave vacant for at least 30 days in summertime and 45-60 days in winter time. Dirt lots should be disked and dragged at least twice during the down period.

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