

NADIS Pig Health - August 2006 **Progressive Atrophic Rhinitis**

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Rhinitis was one of the major disease of pigs through the 1970's and 80's causing major economic loss. Since the causative organism - toxigenic *Pasteurella multocida* - was identified in the early 1980's, effective vaccine has been produced, which has dramatically reduced the incidence and severity of the condition. However, new outbreaks do still occur, and breakdowns are also seen where vaccination programmes are allowed to slip or where other major disease occur (e.g. PRRS and PMWS) that undermines a control programme.

Clinical signs

Atrophic Rhinitis is a disease of the upper airways, particularly the nasal chambers - the principle signs of which are sneezing and nasal discharge in the young piglet of 3-8 weeks of age. As the damage to the nose increases with age, nosebleeds may occur and the snout will become distorted and wrinkled, either upwards or sideways. There will frequently be tear staining on either side of the snout. Growth will be significantly slowed and efficiency of growth impaired. Affected pigs can take 4-6 weeks longer to reach slaughter and herd food conversion ratios can degenerate by 0.5 or more.

Animals that are mildly affected will not show a distorted snout but the filter mechanism of the nose will be damaged (see figures 3 and 4) making the pig far more vulnerable to inhaling dust and infectious particles, which will set up bronchitis and pneumonia.

Whilst death as a direct result of Atrophic Rhinitis is rare, losses do occur as a result of secondary respiratory disease and euthanasia of chronically affected animals.

Breeding gilts that have been reared in a system where Atrophic Rhinitis is present may be slow to come on heat, presumed to be due to damage to nasal receptors that fail to detect boar stimulating pheromones.

Diagnosis

The diagnosis of Atrophic Rhinitis is made primarily on clinical signs supported by examination and scoring of snouts in pigs at slaughter. Nasal swabs can be taken, using a specialist technique, and tested in the laboratory for evidence of the specific causative bacteria.



Fig. 1: *Wrinkled snout with tear staining.*



Fig. 2: *Distorted snout.*



Fig. 3: *Normal structure of the nasal chambers.*



Fig. 4: *Total destruction of the turbinate bones - the filter mechanism in the nose.*

Treatment and control

Treatment of pigs already showing signs of snout distortion can only hope to reduce the impact of secondary infection - the damage having already been done to the snout. Antibiotics in feed can suppress secondary infection and individual injection of pigs severely affected may be appropriate as appetite is likely to be depressed.

When faced with an outbreak of the disease, a treatment programme for baby pigs is appropriate, usually involving individual injection of piglets at 7-10 days, 14-20 days and at weaning, using an antibiotic known to be effective. Potentiated sulphonamides, oxytetracycline and ceftiofur can all be effective.

Use of in feed antibiotics at high levels post weaning for 4 weeks should also be used; the whole programme aimed at reducing the risk of infection becoming established in the young vulnerable pig. Medication of farrowing sows via the feed may also be appropriate to reduce the overall bacterial challenge to the piglets.

A vaccination regime using the commercially available vaccine in gilts and sows should be introduced and maintained, aimed at:

- a. Reducing excretion rates from carrier sows
- b. Protecting piglets via colostrum

The vaccine should not be used unless the infection is known to be present and form a challenge. Prevention of the disease should be based upon biosecurity, not medication.

Prevention

Because Atrophic Rhinitis is caused by a specific bacterial agent that either is or is not present in a population, it should be possible to maintain a herd free of disease by attending to strict security procedures. Most reputable breeding companies only maintain populations monitored to be free of Atrophic Rhinitis, although to minimise the risk of introducing disease incoming stock should be isolated for a period of 4-6 weeks on arrival.

The most common other ways of introducing the disease are:

1. Contamination from cull sows on a collection wagon coming too close to your farm. Likewise, part loads of slaughter pigs.
2. Fellmonger wagons entering the confines of a unit and leaving infection behind.
3. Contamination of boots and overalls between farms.

Basic but strict biosecurity measures will keep Atrophic Rhinitis out.

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