

## **PART 1: LEARNING OBJECTIVES OF MODULE 4:**

**Upon reading Module 4, you should be able to accomplish the following:**

- Discuss common causes of respiratory disease in swine.
- Describe the nature of the principal respiratory diseases in swine, including background infections as a predisposing factor, etiology, frequency, distribution, pathology, and diagnosis.
- Identify common drugs used to treat respiratory disease in swine.
- Describe strategies and management techniques for respiratory disease, including individual treatment versus herd treatment.
- Discuss treatment concerns and selection of appropriate antibacterial drugs.
- Understand the various characteristics of ADVOCIN.
- Understand the microbiology and pharmacokinetics of ADVOCIN.
- Compare ADVOCIN with competing drugs used to treat respiratory disease in swine.
- Describe the results of clinical trials involving ADVOCIN.

## **PART I: RESPIRATORY DISEASE IN SWINE**

Swine respiratory disease is an extremely common occurrence worldwide. Its widespread distribution and potential for economic damage make early, accurate diagnosis and treatment very important. Accurate diagnosis is complicated by the fact that observable disease signs can be symptoms of a variety of respiratory diseases and/or of problems external to the respiratory system. Respiratory disease due to bacterial, viral and/or mycoplasmal infections can be treated and controlled with antibiotics, vaccination or management, or a combination of all three.

### **OVERVIEW**

Where there is intensive pig production, there will also be swine respiratory disease. These diseases can be classified as bacterial diseases, viral diseases and mycoplasmal diseases. Within these classifications, diseases might be described as being a chronic/subclinical condition or as an acute disease condition.

Atrophic rhinitis and necrotic rhinitis are examples of chronic, often subclinical conditions which may progress into clinical/pathological signs. These diseases are of long duration with extensive impact on herd productivity if left untreated for a relatively long period of time.

Pleuropneumonia (also called actinobacillus pneumonia), pasteurellosis, Glasser's Disease and salmonellosis are usually acute diseases; those that have rapid onset of severe symptoms, and, while of short duration, have extensive impact on herd productivity.

Mycoplasma pneumoniae of swine (MPS) normally occurs as a chronic, often subclinical condition that leaves the host open to other invading pathogens, which add to the severity of the existing disease. Most herds experience upsurges of clinical disease, usually triggered by inadequate management practices.

Viral diseases, such as hog cholera, swine influenza and pseudorabies often are the springboard for opportunistic bacterial infections in surviving animals.

Respiratory diseases frequently do not fit exactly into one disease category. Many are mixed infections and can be caused by the combination of bacterial, viral or mycoplasmal pathogens.

## MODULE 4

morbidity (mor-BID-i-ty)  
state of being diseased

pathogenic (path-o-JEN-ik)  
causing or capable of causing  
disease

### Economic Importance

Of major importance is the fact that in modern intensive husbandry practices most swine respiratory disease caused by infectious agents is highly contagious and can result in high **morbidity** and mortality. Its most serious effects are seen in the grower-finisher stage, where it causes significant decreased daily growth rates.

### Management and Prevention

An outbreak of respiratory disease is often the result of inadequate management, especially in the grower-finisher stage. Proper management practices to help reduce respiratory disease problems include those listed below:

- Keep the herd size small (e.g., 150 pigs per house) to reduce the spread of infectious agents.
- Use the all-in/all-out production pattern to improve growth rate and feed efficiency in the grower-finisher pigs, and to allow for proper cleaning of the facility between groups.
- Avoid mixing and sorting to help maintain the pigs' established hierarchic system and prevent introduction of new **pathogens** in the herd. Mixing and sorting also encourages pigs to fight among themselves which is stressful and suppresses the immune system.
- Provide adequate floor and air space to reduce infection pressure by preventing nose-to-nose contact and tail and ear biting.
- Minimize temperature fluctuation to help the pigs keep warm and maintain balanced heat loss.
- Eliminate pollutants through effective ventilation and thereby reduce some of the predisposing factors to respiratory tract infections.