
"HOGG SENSE".....

Alex Hogg, DVM, MS,
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Gleanings from the 1996 Iowa Swine Disease Conference

Protective Mechanisms of the Respiratory Tract: The mucus covering which covers the nasal turbinates traps inhaled particles and infectious agents before they can reach the lower respiratory tract. *Bordetella bronchiseptica* is able to penetrate the mucus layer and attach to the nasal epithelium. This allows toxigenic strains of *Pasteurella multocida* to cause severe damage to the nasal turbinates. An important mechanical barrier to infection in the trachea is mucus covered ciliated epithelium. Infectious agents such as *Mycoplasma hyopneumoniae* disrupt ciliary motility which allows secondary bacterial infections to attack the lungs. (James A. Roth, DVM, PhD, CVM, ISU, Ames, Iowa).

Virulence Factors of Common Respiratory Pathogens: 1. Endotoxin is not as important a virulence factor as was once thought. 2. RTX toxins in APP produce a very good immune response. 3. The hemolysin of *Streptococcus suis* is very important factor in developing a good immune response. (Brad Fenwick, DVM, MS, PhD, CVM, KSU, Manhattan, KS).

Environmental Irritants in Swine Confinement Units: The major airborne contaminants are dust, endotoxin, micro-organisms and ammonia. Airborne dust primarily originates from feed, dried fecal material, skin debris, bacteria and molds. Dust levels in swine buildings range from 2 to 20/m³, compared to 0.05 to 0.11 mg/m³ outdoors. Ammonia concentrations are usually below 30 ppm although they can reach 50 ppm or higher. Humans can detect the pungent odor of this gas at about 10 ppm. (R. Jolie, DVM, MSC & L. Backstrom, DVM, PhD, CVM, Univ. of Wisconsin).

Measurement of Air Quality in Swine Facilities: 1. The most effective environmental monitor is the pig itself. Examples: are pigs piling up or are they in resting in lateral recumbency? are pigs dunging in the sleeping area? etc. 2. The recommended maximum temperature swings are 2°F for farrowing/nursery and 5°F for grow/finish. Use a high/low thermometer. (M.A. Veenhuizen, P.E., PhD, Greenwood, Indiana, 46143).

Viral Respiratory Pathogens-Other Than PRRS: The important swine viral respiratory pathogens are: swine influenza virus (SIV), pseudorabies virus (PRV), porcine respiratory coronavirus (PRCV), porcine paramyxovirus (PPMV), porcine adenovirus (PAV) and porcine cytomegalovirus (PCMV). Note: SIV infects man and has resulted in two confirmed deaths in the last 8 years. Viral respiratory diseases along with opportunistic bacterial infections are a major problem. (C.C.L. Chase, DVM, PhD, SDSU, Brookings, S.D.).