


CONTROL OF RESPIRATORY DISEASE



Sudden dietary changes, weaning, cold, drafts, dampness, dust, high levels of ammonia, poor ventilation in general, and the mixing of widely divergent age groups all play a role in respiratory disease in groups of animals.


Stress and mixing of animals from several sources should be avoided or minimized. Establishing individual animal identification, making accurate clinical and postmortem diagnoses, and maintaining a record system of diagnosis and treatment are important to minimize or control outbreaks of pneumonia.

Transportation over long distances is another stress factor that plays a major role in the pathogenesis of respiratory infections in large animals.



Immunization can help control respiratory infection. However, control may be compromised by improper timing, use of ineffective or inappropriate vaccines, or overwhelmingly negative management practices.

In most cases, severe insults to the natural defenses cannot be reversed later by therapeutic agents and biologicals.



The mucosal surfaces of the respiratory tract contain lymphoid follicles that exchange cells with other parts of the body.

However, most of the lymphocytes in the respiratory lining produce only IgA, whereas the cells in the lymph nodes of the respiratory tract produce IgM and IgG.

Depending on the agent involved, various cell- and antibody-mediated immune responses occur in the respiratory tract and include opsonization, agglutination, immobilization, neutralization of toxins and viruses, blockage of adherence to cells, lysis, and chemotaxis.

The type of immune response varies because of age, species, and the means to respond to specific virulence mechanisms of the pathogens involved.

Species vary in the type of immune response available at different sites in the respiratory tract.

Large antigen droplets may immunize the upper tract with IgA, but small replicating particles may be necessary to immunize the lower tract. To develop adequate antibody levels to protect the lungs, repeated doses of antigen plus adjuvant, or a replicating antigen, are often necessary.

These results are seldom achieved under field conditions (eg, many field trials using respiratory vaccines in cattle have not demonstrated statistically significant efficacy).



Environmental management is an essential part of therapy in allergic respiratory diseases.

For example, clinical signs in horses with heaves (recurrent airway obstruction, or cattle with hypersensitivity pneumonitis may be effectively controlled by preventing exposure to molds present in hay