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The Turkey Respiratory Complex

S. LEMIERE

Merial S.A.S., 29 avenue Tony Garnier 69007 Lyon France

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The respiratory complex is quite commonly described in turkey production worldwide. The respiratory symptoms like dyspnea, sinusitis, nasal discharge, etc. may be exacerbated in poorly managed ventilation conditions in buildings, especially during cold and wet weather conditions. Involved pathogens are numerous. Primary pathogens may be viruses, but not exclusively like the turkey rhinotracheitis virus (TRT), a Metapneumovirus, or the Paramyxovirus type 1 (PMV-1), among the most commonly diagnosed. Secondary infections may involve bacteria like *Ornithobacterium rhinotracheale* (ORT), *Mycoplasma gallisepticum* (MG), *synoviae* (MS), *meleagridis* (MM), or *Escherichia coli* (E coli). They may also act as primary pathogens. *Mycoplasma* infections are very common in turkeys and originate lesions of airsacculitis, pericarditis, perihepatitis, and pneumonia, etc. On top of lack of atmosphere control, immunosuppressive diseases play a role in the respiratory complex of the turkey. The most commonly described viral immunosuppressive agent of turkeys is the hemorrhagic enteritis virus (HEV), an Adenovirus type II. The TRT virus has also some immunosuppressive properties. Evidence of respiratory disorders have been shown in laboratory conditions by the association of pathogens, like TRT and ORT, or in field conditions by the association of ORT and low pathogenic avian influenza virus (AIV) H9N2 for example. Diagnostic tools are: serology, mainly ELISA tests for TRT, inhibition of hemagglutination for PMV-1 for example; bacteriology, mainly for ORT and E. coli; and polymerase chain reaction (PCR) from DNA extracted out of contaminated tissues of the respiratory tract by MG, MS, MM, or from RNA for TRT virus. A field survey using serological monitoring of field exposure to TRT and PMV-1 and performed in Western France, a high density zone of poultry production, showed that both viruses were circulating concomitantly, or not, in at least half of the included flocks with respiratory disorders. And last, but not the least, low pathogenic AIV viruses are involved in turkey respiratory complex, but one appealing sign is the abnormally increased mortality rate associated with extremely acute signs of sinusitis. Current solutions to prevent respiratory complex of the turkey is based on vaccination program using live vaccine application by spray or drinking water. Recommendation consists in 2-3 time live TRT vaccine application from day-old through slaughter age during the rearing period more generally and in at least 2 time live PMV-1 vaccine application during the rearing period. HEV immunosuppressive disease can be controlled by live vaccine application by drinking water. On top of preventive measures using vaccination, the rational use of antibiotics according to results of antibiograms helps solve major bacterial infections.