Outbreak and management of *Mycoplasma gallisepticum* infection in desi chicken and turkey flocks in an organized mixed farm

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Abstract

In an organized farm, desi chicken and turkeys were reported with the clinical signs of congestion of conjunctival mucous membrane, dullness, unilateral and bilateral head swelling and nasal discharge. Flock strength was 545 desi chickens and 296 turkeys of 75 and 50 days old respectively. Morbidity was 3.67 and 6.75% and mortality was 0.91 and 0.67% in chickens and turkeys respectively. On investigation, clinical signs started 12 days after the introduction of desi chicken from another organized farm. In total, 10 chickens and 20 turkeys showed clinical signs, of which 5 desi chicken and 2 turkeys died. On necropsy, the birds showed congestion of conjunctival mucous membrane, unilateral and bilateral infraorbital sinus swelling and caseous material with mucous exudates in the infraorbital sinus. Lungs were congested and edematous. Thoracic and abdominal air sacs were cloudy with beaded appearance, thickened with yellowish caseous material. Infraorbital sinus and ocular swab were collected from live birds. Infraorbital sinus swab, lung and air sacs were collected from dead birds. *Mycoplasma gallisepticum* was isolated from infraorbital sinus and air sac samples and was also confirmed by polymerase chain reaction. Histopathologically, mucopurulent sinusitis and airsacculitis were noticed. The *Mycoplasma gallisepticum* outbreak was effectively controlled by using effective treatment with 1% Tylosin and following strict bio-security measures.

Keywords Turkey · Desi chicken · Chronic respiratory disease · *Mycoplasma gallisepticum* · Outbreak · Tylosin

Introduction

One of the major constraints of poultry farming in the world is disease outbreaks leading to morbidity and mortality, thus affecting the production. *Mycoplasma gallisepticum* (MG) is a highly infectious respiratory pathogen affecting poultry, which is one among the infectious agent causing economic loss to the poultry owners. *Mycoplasma* sp. infection was primarily described in turkeys in 1926 and later in chickens in the year 1936 (Charlton et al. 1996). *Mycoplasma gallisepticum* infection is called as chronic respiratory disease (CRD) in chickens and infectious sinusitis in turkeys. It causes disease in layer, broiler and breeder poultry flocks, characterized by sneezing, respiratory rales, coughing, nasal and eye discharges in chickens and sinusitis in turkeys (Yoder Jr. 1991; Gondal et al. 2015).

Avian mycoplasmosis causes considerable economical losses to the poultry industry, especially in chickens and turkeys all over the world. In broilers, it causes reduction in weight gain, decrease in feed conversion efficiency, increase in mortality rate and increased condemnations in the slaughter houses. In breeders and layers, the disease causes reduction in egg production and an increase in embryo mortality and reduced hatchability and quality of day-old chicks (Ley 2008). In other birds like pheasants, partridges, quail, ducks, geese and other avian species, it causes sinusitis and conjunctivitis (Saif and Jarosz 1978; Ley 2008). Production losses between 10 and 20% have been reported in layers (Bradbury 2001). All age group of chickens and turkeys are susceptible to mycoplasmosis but young birds are more prone to infection than adults (Nunoya et al. 1995). In addition, disinfection, medication and vaccination costs make this disease one of the costliest disease problems challenging the poultry industry.