Cairo University.
Faculty of Veterinary Medicine
Department of Microbiology

Immunological, molecular and pathological studies on respiratory mycoplasmosis

A thesis

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abstract

One hundred and fifty positive serum samples for mycoplasma using serum plate agglutination test (SPA) were collected .The included samples were one day old chicken (36 samples), broilers (40 samples),layers (38 samples), balady chicken (14 samples) and turkeys (22 samples).The samples were collected from different farms in El-Kaliobia, Eldakahlia, El behera and Beni-seuif governorates and examined To study the incidence of MG in the respiratory tract. Samples from nasal cavity, ifra-orbital sinus, trachea, air-sacs and lung were collected from the examined birds. were cultivated in mycoplasma media containing sterile filtrated swine serum and using also horse serum to detect *Mycoplasma gallisepticum*. All suspected colonies were identified by conventional method, growth inhibition test and *PCR*.

The results of isolation (fried egg colony apearance) were recovered 23.33 % from the total number of tested samples was positive, whereas the rate of positive samples was 22.22% for one day old chick ,broiler samples showed 32.5%, layer samples showed 18.42%, balady samples showed 14.28% and turkey samples showed 22.72% from specific total samples for each species. Interestingly, samples from the diseased flocks, 23.33% were only positive by isolation.

In this studies culture methods detect MG from 150 samples was 23.33 % from the suspected samples and Polymerase chain reaction confirmed the *nucleic acid* of the *Mycoplasma gallisepticum* using universal and MG specific primers. Cumulatively PCR confirmed *MG* positive in (42.85%) 0f samples from the same field samples collected during the study.

Tissue samples from the positive MG serological cases were examined histo-pathologically to detect lesions in the tissues. The clinical signs and pathologic lesions were much more significant in the diseased bird by *Mycoplasma gallisepticum*. The pathological changes in upper respiratory tract and lung showed large masses of caseous exudate in the air sacs and predominantly in the abdominal ones. Peritonitis was observed in combined infection with CB. Thoracic air-sacs. Bilateral thoracic as well as abdominal air saculitis with caseous exudate were observed in severely affected combined cases. Histo-pathological examination of hepatic tissue, heart, trachea and lungs of broiler chicken showed Severe pathological changes varied from mild degenerative changes to severe inflammation with different types of inflammatory cells infiltration and /or necrosis in the affected organs.

I dedicate this work to

Spirit my father

My mother

My wife

My daughter Malak

My son Malik

All my family

بِسْمِ اللّهِ الرَّحْمـنِ الرَّحِيمِ

(وَأَنزَلَ اللّهُ عَلَيْكَ الْكِتَابَ

وَالْحِكْمَةَ وَعَلَّمَكَ مَا لَمْ تَكُنْ

تَعْلَمُ وَكَانَ فَضْلُ اللّهِ عَلَيْكَ

عَظِيمًا)

صدق الله العظيم

من الآية (١١٣) سورة النساء

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