



Thesis Abstract

Comparative Evaluation of Isolation, PCR Detection and Clinico – Pathological Diagnostic Approaches in Field Cases of *Mycoplasma hyopneumoniae* Infection in Selected Farms of Luzon, Philippines

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A total of 46 lung tissues and 12 nasal swabs suspected to be *Mycoplasma hyopneumoniae* of swine (MPS) were collected from 15 pig farms in Luzon. These suspected MPS were diagnosed and confirmed using clinico-pathological methods (i.e., clinical signs, gross pathology, hispathology, bacterial isolation, and polymerase chain reaction (PCR)). Also, the sensitivity, specificity, accuracy, positive and negative predictive values of each diagnostic method was determined.

Clinical signs observed were coughing, labored breathing, pyrexia, unthrifty appearance, anorexia, and prolonged course. Gross lesions were confined to the lung and were clearly demarcated from the normal lung. Two types of gross lesion were observed: 1) acute, which is characterized by bilateral fawn, edematous and pink, and 2) chronic, which is characterized by plum-colored, atelactatic areas of anteroventral, apical, cardiac, and diaphragmatic lobes. The enlargement of bronchial and mediastinal lymph nodes was also seen in the infected pigs. In hispathology, peribronchiolar, and perivascular lymphoid hyperplasia as well as lymphoid nodule formation were found to be the most common characteristic lesions associated with *Mycoplasma hyopneumoniae* infection.

Mycoplasma hyopneumoniae isolation from the 46 lung samples gave 4.34 (2/46) percent positive results, while the 12 nasal swabs were all negative. In PCR identification, 17 pigs out of 34 (50%) showed positive reaction in the PCR using DNA extracted from lung tissue, while the 12 nasal swab samples subjected to PCR identification had negative results.

Among the clinico-pathological methods used in this study for MPA diagnosis, hispathology had the highest specificity, accuracy, and positive predictive value, whereas clinical signs had the lowest. Among all methods, PCR had the highest accuracy, followed by clinical signs, gross pathology, and hispathology. Isolation is still considered the diagnostic gold standard.