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Histopathological Changes in Chickens infected with *Pasteurella multocida* and Ducks infected with *Riemerella anatipestifer*

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Abstract

A description and evaluation of histopathological changes in organs of chickens infected with three different serotypes of *Pasteurella multocida* and ducks infected with *Riemerella anatipestifer* were carried out. Seventy-five 4-week old chicken and 25 ducks were selected for the study. The chickens were divided into 3 groups of 25 chickens each while the ducks were not divided. At the start of the experiment, all chickens of group 1 were infected intramuscular with 0.5 mL inoculums containing 10⁹ cfu/mL of live *Pasteurella multocida* A:1. Chickens of groups 2 and 3 were similarly infected with *Pasteurella multocida* A:3 and A:1, 3 respectively while all ducks were infected with *Pasteurella multocida* A:1 followed by *Riemerella anatipestifer*. All animals were observed for clinical signs and the survivors killed on day 8 post-infection. The lungs, liver and kidneys were collected during postmortem and histology examinations, and the lesions were described and severity objectively scored. Intramuscular inoculation of chickens with *Pasteurella multocida* A:1, A:3 and A:1,3 killed most chickens at the rate of 92, 96 and 86%, respectively. The gross lesions consisted of generalised congestion of internal organs with occasional haemorrhages. Histology revealed severe pulmonary, hepatic and renal congestions with occasional haemorrhages and focal hepatitis. Based on rate of mortality and histology lesion scoring, *Pasteurella multocida* A:3 was found to be most virulent while *Pasteurella multocida* A:1,3 the least virulent of the three serotypes. Infection by *Pasteurella multocida* A:1 followed by *Riemerella anatipestifer* in ducks resulted in similar lesions with 94% mortality rate.

Keywords: Histopathology, *Pasteurella multocida*, *Riemerella anatipestifer*, chickens, ducks