

PULLORUM DISEASE AND FOWL TYPHOID

Slide Study Set #22

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*This study set is dedicated to the memory of Dr. G. H. Snoeyenbos.
His encouragement and support contributed significantly to the
preparation of this work.*

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By: H. L. SHIVAPRASAD and R. P. CHIN

Pullorum disease (PD) and fowl typhoid (FT) are highly infectious and contagious diseases of poultry first described in 1900 and 1888, respectively. Losses from PD and FT were so severe that they once impaired the expansion of the poultry industry. The development of rapid serological tests and a voluntary national surveillance program have contributed significantly to the control of these two diseases in commercial poultry flocks in the United States. PD still occurs in backyard flocks, and occasionally in commercial flocks. For example, in 1990 and 1991 there were outbreaks of PD in integrated broiler/roaster operations in the Delmarva and Southeastern regions of the U.S. Currently, reports of FT in the U.S. are rare.

Because of the similarities between pullorum disease and fowl typhoid in regard to clinical signs, pathology, diagnosis and control, these two diseases will be described together. However, there are certain epizootiological and biochemical differences between the causative agents of the two diseases which will be discussed where appropriate.

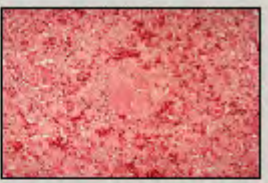
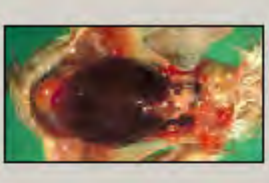
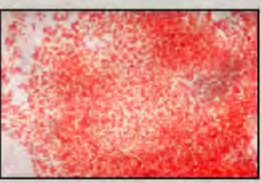
Susceptible species. PD and FT primarily affect chickens and turkeys and are rarely significant diseases in other avian species, although bobwhite quail are highly susceptible to PD.

Birds of all ages are susceptible, but the greatest mortality, sometimes approaching 100%, occurs in birds less than 4 weeks of age, especially in PD. In FT, the disease often continues for months and outbreaks can occur in some mature flocks with no history of an earlier onset. Acute infections of PD in mature fowl are rare.

Etiology. PD is caused by *Salmonella pullorum* and FT is caused by *S. gallinarum*. Both organisms are Gram negative, facultatively anaerobic, non-motile rod-shaped bacteria, and are members of *Salmonella* group D. The somatic (O) antigens of both organisms are similar, with the exception of form variations in antigen 12 of *S. pullorum*. Another important member of *Salmonella* group D is *S. enteritidis*, which also has similar somatic (O) antigens as *S. pullorum* and *S. gallinarum*. Antigenic and biochemical characteristics of the 3 species are shown in Table 1.

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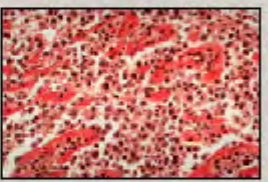
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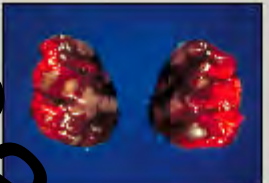
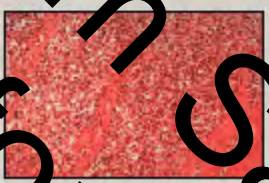
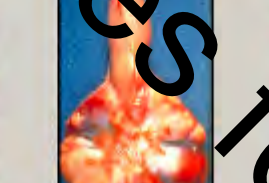
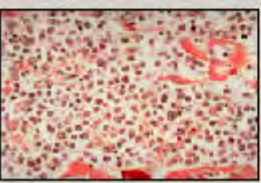
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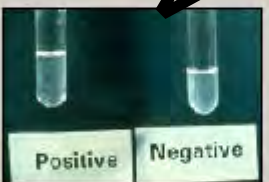
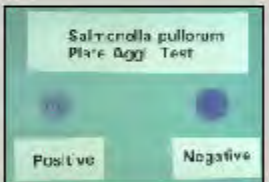
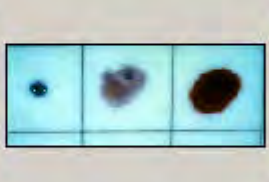
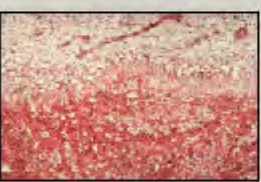
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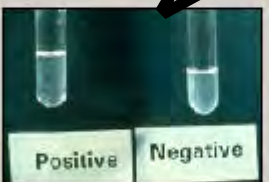
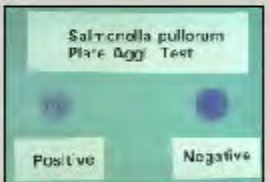
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