PULLORUM DISEASE AND FOWL TYPHOID

Slide Study Set #22

Prepared by:

H. L. SHIVAPRASAD

and

R. P. CHIN

California Veterinary Diagnostic Laboratory System
Fresno Branch
University of California, Davis
2789 S. Orange Ave.
Fresno, CA 93725

This slide study set was created in 1996; some information may be outdated.

COPYRIGHT 1996

AMERICAN ASSOCIATION OF AVIAN PATHOLOGISTS, INC.

AAAP BUSINESS OFFICE
NEW BOLTON CENTER
382 WEST STREET RD.
KENNETT SQUARE, PA 19348

CD version produced in 2001 with the assistance of the AAAP Continuing Education and Electronic Information Committees
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.

PULLORUM DISEASE AND FOWL TYPHOID

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 epizootiologic 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.
REFERENCES


