

EDITOR

Jagdev M. Sharma
The Biodesign Institute
Arizona State University
Tempe, Arizona 85287-5401

BUSINESS MANAGER

Charles L. Hofacre
University of Georgia
953 College Station Road
Athens, Georgia 30602-4875

EDITORIAL BOARD

A. Banda
A. J. Bermudez
G. Browning
H. D. Chapman
R. P. Chin
S. Davison
J. M. Day
C. Ewers
A. M. Fadly
S. D. Fitzgerald
O. J. Fletcher
M. Garcia
R. K. Gast
P. Gibbs
I. Gimeno
J. S. Guy
F. J. Hoerr
D. J. Jackwood
M. W. Jackwood
T. Johnson
D. R. Kapczynski
S. H. Kleven
C. W. Lee
M. Lee
H. S. Lillehoj
B. Lupiani
L. R. McDougald
L. Nolan
M. Pantin-Jackwood
M. S. Parcells
S. Rautenschlein
S. Reddy
D. L. Reynolds
K. Roland
Y. M. Salt
K. A. Schat
H. L. Shivaprasad
R. F. Silva
E. Spackman
D. L. Suarez
D. E. Swayne
H. Toro
J.-P. Vaillancourt
V. van Santen
P. S. Wakenell
P. Wigley
P. R. Woolcock
C. C. Wu
Q. Zhang
L. Zsak

Avian Diseases

An international journal dedicated to avian health

Published Quarterly by
the American Association of Avian Pathologists



Vol. 56 No. 2

June 2012

Pages 263–448

Avian Diseases

Vol. 56, No. 2

June 2012

Table of Contents

Regular Articles—

Epidemiologic Characterization of Colorado Backyard Bird Flocks. EMILY I. SMITH, JOHN S. REIF, ASHLEY E. HILL, KATHERINE E. SLOTA, RYAN S. MILLER, KATHE E. BJORK, AND KRISTY L. PABILONIA	263
The Efficacy of Three Commercial <i>Mycoplasma gallisepticum</i> Vaccines in Laying Hens. N. FERGUSON-NOEL, K. COOKSON, V. A. LAIBINIS, AND S. H. KLEVEN	272
Low Pathogenicity Avian Influenza Viruses Infect Chicken Layers by Different Routes of Inoculation. MARY J. PANTIN-JACKWOOD, DIANE M. SMITH, JAMIE L. WASILENKO, AND ERICA SPACKMAN	276
Advancement in Vaccination Against Newcastle Disease: Recombinant HVT NDV Provides High Clinical Protection and Reduces Challenge Virus Shedding with the Absence of Vaccine Reactions. V. PALYA, I. KISS, T. TATAR-KIS, T. MATÓ, B. FELFÖLDI, AND Y. GARDIN	282
Transmission and Shedding Patterns of <i>Salmonella</i> in Naturally Infected Captive Wild Roof Rats (<i>Rattus rattus</i>) from a <i>Salmonella</i> -Contaminated Layer Farm. DENNIS V. UMALI, RANDY RHON SIMOUN P. LAPUZ, TERUMASA SUZUKI, KAZUTOSHI SHIROTA, AND HIROMITSU KATOH	288
Optimization of the Protocols for Double Vaccination Against Marek's Disease by Using Commercially Available Vaccines: Evaluation of Protection, Vaccine Replication, and Activation of T Cells. ISABEL M. GIMENO, ANEG L. CORTES, RICHARD L. WITTER, AND ARUN R. PANDIRI	295
Gel-Bead Delivery of <i>Eimeria</i> Oocysts Protects Chickens Against Coccidiosis. MARK C. JENKINS, CAROLYN PARKER, SPANGLER KLOPP, CELIA O'BRIEN, KATARZYNA MISKA, AND RAYMOND FETTERER	306
Influence of Swab Material on the Detection of <i>Mycoplasma gallisepticum</i> and <i>Mycoplasma synoviae</i> by Real-Time PCR. NAOLA FERGUSON-NOEL, VICTORIA A. LAIBINIS, AND MICHELLE FARRAR	310
Development and Preliminary Application of a Quantitative PCR Assay for Detecting <i>gtxA</i> -Containing <i>Gallibacterium</i> Species in Chickens. HEPING HUANGFU, JUN ZHAO, XIA YANG, LU CHEN, HONGTAO CHANG, XINWEI WANG, QIAOJING LI, HUIXIA YAO, AND CHUANQING WANG	315
Complete Genomic Sequence of the Virulent Bacteriophage RAP44 of <i>Riemerella anatipestifer</i> . LONG-FEI CHENG, HONG-MEI CHEN, TENG ZHENG, GUANG-HUA FU, SHAO-HUA SHI, CHUN-HE WAN, AND YU HUANG	321

About the cover

Leland C. Grumbles (1921–2006)

Leland Grumbles was born in Arkansas and received his veterinary degree from Texas A&M in 1945. After brief stints in Rhode Island and Louisiana, he joined the faculty of Texas A&M in 1949 where he spent the rest of his career, serving as department chair and retiring in 1984. Grumbles contributed to our knowledge of coccidiosis, mycoplasmosis and other avian diseases. However, he is perhaps best remembered for his critical role in the formation of the American Association of Avian Pathologists in 1957. He organized the first meeting, served on the organizing committee, and served as president from 1974–1975. He was active on many AAAP committees, including the history committee where he was responsible for the establishment of the AAAP archives at Iowa State University. He authored with Charles Hall a 30-year history of the AAAP and provided many early documents on the origins of the AAAP. He was elected to life membership in 1987.