

Sero Prevalence Of Newcastle Disease In Humans And

Defining importance of diseases; FAO/EMPRES: a new emphasis; Early detection; The need for surveillance; What is surveillance?; Surveillance on the ground; Putting a surveillance system in place; Surveillance for what?; Surveillance when and how?; Surveillance in resource-poor countries; Information systems; Setting the goals; Determining needs and outputs; Computerisation; Questionnaire design; Databases; Data quality control; Feedback; The role of GIS; Motivating and training field staff; Awareness creation among decision-makers; Using surveillance as a management tool; FAO involvement in surveillance and information systems development; Examples of questionnaires.

This edition is the most updated since its inception, is the essential text for students and professionals working in and around epidemiology or using its methods. It covers subject areas - genetics, clinical epidemiology, public health practice/policy, preventive medicine, health promotion, social sciences and methods for clinical research.

Bacterial diseases and pathogens; Fungal diseases and pathogens; Viral diseases and pathogens.

Connecting minds with knowledge. With its acclaimed authors, cutting-edge content, emphasis on medical relevance, and coverage based on landmark research, Ebola Virus Disease: A Guide for Corporations and Large Institutions has earned an impeccable reputation as an authoritative and exciting curated research journal and learning aid, perfect for students, medical professionals and other sophisticated readers. Hundreds of hours were spent compiling and editing this volume such that its readers are conveniently brought up-to-speed on the subject, presenting many of the latest and most important developments in the field. This volume presents 20 cutting-edge research papers on ebola, curated by our experts for maximal significance. Articles include: Transmission dynamics and control of Ebola virus disease (EVD): a review; Ebola, epidemics, and ethics - what we have learned; Outbreaks of Ebola virus disease in Africa: the beginnings of a tragic saga; Need of surveillance response systems to combat Ebola outbreaks and other emerging infectious diseases in African countries; Recombinant lentogenic Newcastle disease virus expressing Ebola virus GP infects cells independently of exogenous trypsin and uses macropinocytosis as the major pathway for cell entry; Impact on nurses of ebola outbreak; Guidance for contact tracing of cases of Lassa fever, Ebola or Marburg haemorrhagic fever on an airplane: results of a European expert consultation; “ A time of fear ” : local, national, and international responses to a large Ebola outbreak in Uganda; Prediction and identification of mouse cytotoxic T lymphocyte epitopes in Ebola virus glycoproteins; Induction of ebolavirus cross-species immunity using retrovirus-like particles bearing the Ebola virus glycoprotein lacking the mucin-like domain; Ebola haemorrhagic fever outbreak in Masindi District, Uganda: outbreak description and lessons learned; Tackling Ebola: new insights into prophylactic and therapeutic intervention strategies; Full-length Ebola glycoprotein accumulates in the endoplasmic reticulum; A bioengineering approach for rational vaccine design towards the Ebola Virus; Large serological survey showing cocirculation of Ebola and Marburg viruses in Gabonese bat populations, and a high seroprevalence of both viruses in Rousettus aegyptiacus; Effect of Ebola virus proteins GP, NP and VP35 on VP40 VLP morphology; Packaging of actin into Ebola virus VLPs; and Ebola virus infection inversely correlates with the overall expression levels of promyelocytic leukaemia (PML) protein in cultured cells.

Infectious Diseases of Wild Birds

Pediatric Dialysis

A Guide for Corporations and Large Institutions

A Laboratory Manual for the Isolation and Identification of Avian Pathogens

Avulavirus Infections—Advances in Research and Treatment: 2012 Edition

Occupational Health and Safety in the Care and Use of Research Animals

Brucellosis, also known as undulant fever, Mediterranean fever, or Malta fever, is an important human disease in many parts of the world. It is a zoonosis and the infection is almost invariably transmitted to people by direct or indirect contact with infected animals or their products. These Guidelines are designed as a concise, yet comprehensive, statement on brucellosis for public health, veterinary and laboratory personnel without access to specialized services. They are also to be a source of accessible and updated information for such others as nurses, midwives and medical assistants who may have to be involved with brucellosis in humans. Emphasis is placed on fundamental measures of environmental and occupational hygiene in the community and in the household as well as on the sequence of actions required to detect and treat patients.

Free-living birds encounter multiple health hazards brought on by viruses, bacteria, and fungi, some which in turn can significantly impact other animal populations and human health. Newly emerging diseases and new zoonotic forms of older diseases have brought increased global attention to the health of wild bird populations. Recognition and management of these diseases is a high priority for all those involved with wildlife. Infectious Diseases of Wild Birds provides biologists, wildlife managers, wildlife and veterinary health professionals and students with the most comprehensive reference on infectious viral, bacterial and fungal diseases affecting wild birds. Bringing together contributions from an international team of experts, the book offers the most complete information on these diseases, their history, causative agents, significance and population impact. Focusing on more than just treatment, special emphasis is given to disease processes, recognition and epidemiology.

Eleven years ago the circular DNA of a novel single-stranded virus has been cloned and partially characterized by Nishizawa and Okamoto and their colleagues. According to the initials of the patient from whom the isolate originated, the virus was named TT virus. This name has been subsequently changed by the International Committee on Taxonomy of Viruses (ICTV) into Torque teno virus, permitting the further use of the abbreviation TTV. Although initially suspected to play a role in non A –E hepatitis, subsequent studies failed to support this notion. Within a remarkably short period of time it became clear that TT viruses are widely spread globally, infect a large proportion of all human populations studied

thus far and represent an extremely heterogeneous group of viruses, now labelled as Anelloviruses. TT virus-like infections have also been noted in various animal species. The classification of this virus group turns out to be difficult, their DNA contains between 2200 and 3800 nucleotides, related so-called TT-mini-viruses and a substantial proportion of intragenomic recombinants further complicate attempts to combine these viruses into a unifying phylogenetic concept.

Animal Disease Surveillance is key to improving disease analysis, early warning and predicting disease emergence and spread. Early warning systems are dependent on the quality of animal disease information collected at all levels via effective surveillance; therefore, data gathering and sharing is essential to understand the dynamics of animal diseases in diverse agro-ecological settings to support effective decision-making to prevent disease and for emergency response.

A Technology Review

Science, Research and Self-Study Guide

Epidemiology of Newcastle Disease in Village Chickens in Ethiopia

A Field and Laboratory Manual

Egg Safety and Nutritional Quality

Microbial Zoonoses and Sapronoses

Previously released in June 2004 and temporarily withdrawn. Now available!) Keeping poultry contributes substantially to household food security throughout the developing world. One of the principal constraints to increasing small-scale poultry production is Newcastle Disease. This acute viral disease can typically kill up to 80 percent of unprotected poultry in rural areas and is found throughout the developing world. This technology review presents the latest understanding of Newcastle Disease, its characteristics, epidemiology, symptoms, and control. It will be of practical value to state and private veterinarians, and to all those involved with rural poultry production who wish to control this disease.

Found worldwide from Alaska to Australasia, Toxoplasma gondii knows no geographic boundaries. The protozoan is the source of one of the most common parasitic infections in humans, livestock, companion animals, and wildlife, and has gained notoriety with its inclusion on the list of potential bioterrorism microbes. In the two decades since the publi

Avian Influenza (AI) and Newcastle Disease (ND) are two devastating diseases of poultry, which cause losses to the poultry industry and influence the liveability of rural communities worldwide. Following the H5N1 epidemic they appear to be endemic at least in Asia, Eastern Europe, The Middle East and Africa. Particularly in case of AI outbreaks it is essential that infection is diagnosed promptly and that isolates are made available to the international scientific community. Currently, several organisations including OIE, FAO and the EC have organised training courses in affected areas. However, often these courses do not cover all aspects of AI/ND diagnosis but only certain aspects. This results in fragmented areas of knowledge and in the application of different diagnostic protocols in different parts of the world. The objective of this book is to provide a comprehensive approach to AI diagnosis ranging from the clinical elements that should trigger a suspicion in the field, to the post mortem technique, collection of samples, processing/ shipment of specimens, virological, serological and molecular diagnosis and guidelines for notification.

The Food and Agriculture Organization of the United Nations has recently estimated that the world equid population exceeds 110 million. Working equids (horses, ponies, donkeys, and mules) remain essential to ensure the livelihood of poor communities around the world. In many developed countries, the equine industry has significant economical weight, with around 7 million horses in Europe alone. The close relationship between humans and equids and the fact that the athlete horse is the terrestrial mammal that travels the most worldwide after humans are important elements to consider in the transmission of pathogens and diseases, amongst equids and to other species. The potential effect of climate change on vector ecology and vector-borne diseases is also of concern for both human and animal health. In this Special Issue, we intend to explore our understanding of a panel of equine viruses, looking at their pathogenicity, their importance in terms of welfare and potential association with diseases, their economic importance and impact on performance, and how their identification can be helped by new technologies and methods.

Field Manual of Wildlife Diseases

Brucellosis in Humans and Animals

The Still Elusive Human Pathogens

Comparative Quantification of Health Risks: Sexual and reproductive health

Medical Management of Biological Casualties Handbook

Characteristics and Opportunities for Market-oriented Development

This book provides fundamental information on pet birds, menaces, and advances made in the diagnosis and treatment of menaces. It is the only book covering all species of pet birds and their individual management. The handful of related books available worldwide are largely outdated and focus on a single species or breed of pet bird. The book encompasses the husbandry, keeping, common breeds of birds, their nutritional requirements, list of zoonotic diseases transmitted by birds and guideline for their prevention. It covers infectious, non-infectious and metabolic diseases, and toxicity in detail with a special focus on the history of diseases, etiology, affected hosts, pathogenesis, clinical signs, diagnosis and treatment. Separate chapters

diagnostic techniques, management and care practices, including updated information. The book offers an invaluable guide for students and teachers in the field of (avian) veterinary scientists/research scholars working in related fields, and avian medicine practitioners, as well as all those progressive bird owners who want to know the basics of their care and management. The provision of optimal dialysis therapy to children requires a thorough understanding of the multi-disciplinary manner in which the pediatric patient is affected by renal insufficiency. Of the technical aspects of peritoneal dialysis, hemodialysis and continuous renal replacement therapy must be complemented by attention to issues such as anemia, renal osteodystrophy, hypertension, growth, cognitive development, nutrition, nursing care and the psychosocial adaptation of the child and family to chronic disease. The inaugural edition of Pediatric Dialysis is a comprehensive review of these and other related topics with a singular emphasis on the unique aspects of their application to children. With authoritative, clinically relevant, well-written chapters by a host of recognized international experts who emphasize key aspects of contemporary management, Pediatric Dialysis has been designed to serve as a primary resource for those involved in the care of the pediatric dialysis patient.

The Virology Methods Manual is a comprehensive source of methods for the study, manipulation, and detection of viruses. Edited by Brian Mahy and Hillar Kangro, this work describes up-to-date, definitive techniques, provided by experts in each area, and presented with easy-to-use, step-by-step protocols. This new manual will satisfy the needs of virologists and all those who work with viruses who need a practical guide to methods that work! Provides up-to-date techniques by experts worldwide Presents common, step-by-step protocols in an attractive, easy-to-use format Includes useful appendices including virus taxonomy, metabolic inhibitors, and Bio-safety in the virology laboratory

This timely publication updates and standardizes currently used diagnostic procedures for this widespread, economically costly livestock disease. It includes state-of-the-art techniques for the limited use, which will replace the conventional methodology in the near future. The volume covers research done on improved diagnostic techniques, vaccines, taxonomy, epidemiology, and basic immunology. It is an important literature review for those more established in this field and serves as a guide to researchers or diagnosticians becoming involved with the disease. Animal Brucellosis

Virology Methods Manual

The Geographical Distribution of Animal Viral Diseases

FMD Research: Bridging the Gaps with Novel Tools

Diseases of Poultry

A Guide for Federal, State and Local Governments

The specific objectives of this study were to determine the Newcastle disease virus (NDV) antibody titres from the chicken sera collected from various districts and provinces of Zambia and to determine the seroprevalence of ND in Zambian backyard chickens. Results showed that 73.9 % of the birds sampled tested positive for Newcastle disease (ND) antibodies. The seroprevalence of Newcastle disease virus (NDV) in Zambian backyard chicken flocks varied among the five provinces sampled, ranging from 82.6 % in Eastern Province to 48.3 % in Luapula Province. The seroprevalence of the virus also varied among the 11 districts sampled, ranging from 91.3 % in Monze District of Southern Province to 22.8 % in Mufulira District of the Copperbelt Province. The results indicated that the seroprevalence of ND in Zambia has increased since the last survey conducted in 1994. The data generated is expected to contribute towards a more clear understanding of the epidemiology of NDV that would ultimately contribute towards an improved ND control programme to benefit all stakeholders in Zambia. An improved ND control programme is expected to enhance flock numbers and ultimately improve the dietary requirements and income needs of many poor households in the country.

Avulavirus Infections—Advances in Research and Treatment: 2012 Edition is a ScholarlyBrief™ that delivers timely, authoritative, comprehensive, and specialized information about Avulavirus Infections in a concise format. The editors have built Avulavirus Infections—Advances in Research and Treatment: 2012 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Avulavirus Infections in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Avulavirus Infections—Advances in Research and Treatment: 2012 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at <http://www.ScholarlyEditions.com/>.

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epitopes in Ebola virus glycoproteins; Induction of ebolavirus cross-species immunity using retrovirus-like particles bearing the Ebola virus glycoprotein lacking the mucin-like domain; Ebola haemorrhagic fever outbreak in Masindi District, Uganda: outbreak description and lessons learned; Tackling Ebola: new insights into prophylactic and therapeutic intervention strategies; Full-length Ebola glycoprotein accumulates in the endoplasmic reticulum; A bioengineering approach for rational vaccine design towards the Ebola Virus; Large serological survey showing cocirculation of Ebola and Marburg viruses in Gabonese bat populations, and a high seroprevalence of both viruses in Rousettus aegyptiacus; Effect of Ebola virus proteins GP, NP and VP35 on VP40 VLP morphology; Packaging of actin into Ebola virus VLPs; and Ebola virus infection inversely correlates with the overall expression levels of promyelocytic leukaemia (PML) protein in cultured cells.

This book primarily focuses on the African Sahel region, shedding new light on the epidemiology, socio-economics, clinical manifestations and control approaches of transboundary animal diseases (TADs) in this specific region. In addition to the description of TADs in Sahelian Africa and connected regions, several issues regarding the burden of TADs, the role of national/regional/international veterinary organizations in the surveillance process, animal mobility, one health and TADs in the dromedary are discussed. The book contains 22 chapters and is structured in three parts, i- general features and commonalities, ii- viral diseases, iii- bacterial diseases. Each chapter was written by a group of experts specialized in the topic. This work will be of general interest to researchers, veterinarians, veterinary public health officers, and students engaged in the surveillance and control of animal infectious diseases, included those of zoonotic nature and that are prevalent in the Sahel.

Biosecurity Assessment and Seroprevalence of Respiratory Diseases in Backyard Poultry Flocks Located Close and Far from Commercial Premises

A Collection of Articles

Ebola Virus Disease

Newcastle Disease, with Special Emphasis on Its Effect on Village Chickens

Ebola

General Field Procedures and Diseases of Birds

Much has been written about the care of research animals. Yet little guidance has appeared on protecting the health and safety of the people who care for or use these animals. This book, an implementation handbook and companion to Guide For the Care and Use of Laboratory Animals, identifies principles for building a program and discusses the accountability of institutional leaders, managers, and employees for a program's success. It provides a detailed description of risks-- physical and chemical hazards, allergens and zoonoses, and hazards from experiments--which will serve as a continuing reference for the laboratory. The book offers specific recommendations for controlling risk through administrative procedures, facility design, engineering controls, and periodic evaluations. The volume focuses on the worker, with detailed discussions of work practices, the use of personal protective gear, and the development of an emergency response plan. This handbook will be invaluable to administrators, researchers, and employees in any animal research facility. It will also be of interest to personnel in zoos, animal shelters, and veterinary facilities.

Connecting minds with knowledge. With its acclaimed authors, cutting-edge content, emphasis on medical relevance, and coverage based on landmark research, Ebola: Science, Research and Self-Study Guide has earned an impeccable reputation as an authoritative and exciting curated research journal and learning aid, perfect for students, medical professionals and other sophisticated readers. Hundreds of hours were spent compiling and editing this volume such that its readers are conveniently brought up-to-speed on the subject, presenting many of the latest and most important developments in the field. This volume presents 20 cutting-edge research papers on ebola, curated by our experts for maximal significance. Articles include: Transmission dynamics and control of Ebola virus disease (EVD): a review; Ebola, epidemics, and ethics - what we have learned; Outbreaks of Ebola virus disease in Africa: the beginnings of a tragic saga; Need of surveillance response systems to combat Ebola outbreaks and other emerging infectious diseases in African countries; Recombinant lentogenic Newcastle disease virus expressing Ebola virus GP infects cells independently of exogenous trypsin and uses macropinocytosis as the major pathway for cell entry; Impact on nurses of ebola outbreak; Guidance for contact tracing of cases of Lassa fever, Ebola or Marburg haemorrhagic fever on an airplane: results of a European expert consultation; "A time of fear": local, national, and international responses to a large Ebola outbreak in Uganda; Prediction and identification of mouse cytotoxic T lymphocyte epitopes in Ebola virus glycoproteins; Induction of ebolavirus cross-species immunity using retrovirus-like particles bearing the Ebola virus glycoprotein lacking the mucin-like domain; Ebola haemorrhagic fever outbreak in Masindi District, Uganda: outbreak description and lessons learned; Tackling Ebola: new insights into prophylactic and therapeutic intervention strategies; Full-length Ebola glycoprotein accumulates in the endoplasmic reticulum; A bioengineering approach for rational vaccine design towards the Ebola Virus; Large serological survey showing cocirculation of Ebola and Marburg viruses in Gabonese bat populations, and a high seroprevalence of both viruses in Rousettus aegyptiacus; Effect of Ebola virus proteins GP, NP and VP35 on VP40 VLP morphology; Packaging of actin into Ebola virus VLPs; and Ebola virus infection inversely correlates with the overall expression levels of promyelocytic leukaemia (PML) protein in cultured cells.

This book, Tropical Animal Health, describes the problems of animal diseases in the tropics, in the tropical environment, and in relation to particular production systems. In Part I, those basic scientific facts of the special host defence mechanism and of the host-pathogen relationship in the tropics, which hardly play any part in animal husbandry in temperate climates, are explained. Of special importance are the resistance mechanisms of autochthonous breeds and in contrast to them, the high susceptibility of exotic breeds in the tropics. It is explained how immuno- and chemoprophylaxis can be used as instruments for animal health measures if they are adapted to the socio-economic and ecological conditions of both the tropics and developing countries. Scientific details of immunology are presented as far as they are necessary to understand the epizootiology of tropical diseases and diagnostic techniques for recognizing tropical diseases as well

as the execution of prophylactic measures. Vector-borne diseases are the disease complexes most difficult to control since they are bound to the tropical environment, thanks to the biology of their vectors. Therefore, a special chapter has been dedicated to the description of biology and eradication of vectors of vector-borne diseases. The extent of the description varies according to the importance of the specific vector. The acaricides, insecticides and alternative methods used to control vectors are discussed in detail. The author has tried to present a world-wide picture, but it is not possible to cover every aspect completely.

The Geographical Distribution of Animal Viral Diseases attempts to shed some light on the global distribution of 110 different viral diseases, mainly of livestock and companion animals. The world literature was screened for 110 different viruses, and maps were prepared. These maps delineate the global distribution of pathogenic viruses based on authenticated reports from a variety of reliable sources. Four viruses were categorized as affecting more than one species to a significant degree (astrovirus, rabies, rotaviruses, and Rift Valley fever). The largest number of maps involved viruses that affect humans. Of the 28 viruses a large number were from the California encephalitis group. Ten of the 28 viruses were reported only in the Eastern Hemisphere, 14 only in the Western Hemisphere, and four were worldwide. Birds were the next most frequently affected group with the 15 viruses, followed by pigs with 14 viruses. Overall the vector-borne viruses appear to have much sharper and clear-cut geographical boundaries than the others.

Their Production and Use

Challenges of Animal Health Information Systems and Surveillance for Animal Diseases and Zoonoses

Indigenous Chicken Production and Marketing Systems in Ethiopia

Avian Influenza and Newcastle Disease

Toxoplasmosis of Animals and Humans

Improving the Safety and Quality of Eggs and Egg Products

This book presents the state of art in the field of microbial zoonoses and sapronoses. It could be used as a textbook or manual in microbiology and medical zoology for students of human and veterinary medicine, including Ph.D. students, and for biomedicine scientists and medical practitioners and specialists as well. Surprisingly, severe zoonoses and sapronoses still appear that are either entirely new (e.g., SARS), newly recognized (Lyme borreliosis), resurging (West Nile fever in Europe), increasing in incidence (campylobacteriosis), spatially expanding (West Nile fever in the Americas), with a changing range of hosts and/or vectors, with changing clinical manifestations or acquiring antibiotic resistance. The collective term for those diseases is (re)emerging infections, and most of them represent zoonoses and sapronoses (the rest are anthroponoses). The number of known zoonotic and sapronotic pathogens of humans is continually growing – over 800 today. In the introductory part, short characteristics are given of infectious and epidemic process, including the role of environmental factors, possibilities of their epidemiological surveillance, and control. Much emphasis is laid on ecological aspects of these diseases (haematophagous vectors and their life history; vertebrate hosts of zoonoses; habitats of the agents and their geographic distribution; natural focality of diseases). Particular zoonoses and sapronoses are then characterized in the following brief paragraphs: source of human infection; animal disease; transmission mode; human disease; epidemiology; diagnostics; therapy; geographic distribution.

Accompanying CD-ROM contains annex tables detailing population attributable fractions, mortality, and disease burden for selected major risk factors.

The most complete and definitive reference to all aspects of poultry diseases, Diseases of Poultry, Fourteenth Edition has been fully revised and updated to offer a comprehensive survey of current knowledge. Updates the definitive reference of poultry health and disease Provides more clinically relevant information on management of specific diseases, contributed by clinical poultry veterinarians Offers information on disease control in organic and antibiotic-free production Presents more concise, streamlined chapters for ease of use Incorporates advances in the field, from new diagnostic tools and information to changes brought about by the increasing globalization and the re-emergence of zoonotic pathogens

This book, which is the first volume of the book series-Livestock Diseases and Management, summarizes the prominence and implications of the emerging and transboundary animal viruses. Although the livestock plays an important role in the economy of many countries, the emerging and transboundary animal viral diseases possess a serious risk to the animal-agriculture sector and food security globally. The book describes the precise and up-to-date information on animal viral diseases which have emerged in the recent past or are re-emerging due to various environmental factors and those which are not bounded in restricted national boundaries and attained the transboundary status. The chapters summarize the recent advancements in the molecular state-of-art tools towards the development of diagnostics, prophylactics, and therapeutics of these viruses. It also explicitly describes the challenges imposed by the emerging and transboundary viral infections and our preparedness to counter them.

Seroprevalence of Newcastle Disease Virus (avian Paramyxovirus Type 1) in Zambian Backyard Chicken Flocks

Poultry Practice

TT Viruses

Equine Viruses

Transboundary Animal Diseases in Sahelian Africa and Connected Regions

Tropical Animal Health

Eggs are economical and of high nutritional value, yet can also be a source of foodborne disease. Understanding of the factors influencing egg quality has increased in recent years and new technologies to assure egg safety have been developed. Improving the safety and quality of eggs and egg products reviews recent research in these areas Volume 2 focuses on egg safety and nutritional quality. Part one provides an overview of egg contaminants, covering both microbial pathogens and chemical residues. Salmonella control in laying hens is the focus of part two. Chapters cover essential topics such as monitoring and control procedures in laying flocks and egg decontamination methods. Finally, part three looks at the role of eggs in nutrition and other health applications. Chapters cover dietary cholesterol, egg allergy, egg enrichment and bioactive fractions of eggs, among other topics. With its distinguished editors and international team of contributors, Volume 2 of Improving the safety and quality of eggs and egg products is an essential reference for managers in the egg industry, professionals in the food industry using eggs as ingredients and all those with a research interest in the subject. Focuses on egg safety and nutritional quality with reference to egg contaminants such as Salmonella Enteritidis Chapters discuss essential topics such as monitoring and control procedures in laying flocks and egg decontamination methods Presents a comprehensive overview of the role of eggs in nutrition and other health applications including dietary cholesterol, egg allergy, egg enrichment and bioactive fractions of eggs

Raising backyard chickens is an ever-growing hobby in the United States. These flocks can be a substrate for respiratory disease amplification and transmission to commercial facilities. Five hundred fifty-four chickens from 41 backyard flocks were sampled for serology and ELISA kits were used to detect antibodies against avian influenza (AI), infectious laryngotracheitis (ILT), Newcastle disease (ND), infectious bronchitis (IB), Ornithobacterium rhinotracheale (ORT), Mycoplasma gallisepticum (MG), and Mycoplasma synoviae (MS). All visited flock owners answered a questionnaire that assessed biosecurity measures and the distance to the nearest commercial poultry facility was mapped. ORT, ND, IB, MS, MG and ILT were the most seroprevalent in backyard poultry flocks with 97% (41/42), 77.5% (31/40), 75% (30/40), 73% (31/42), 69% (29/42), and 45% (19/42), respectively. Only one flock had a clear vaccination history against ND and IB and was not considered in these calculations. The questionnaire revealed that backyard poultry owners rarely use simple biosecurity measures such as use of dedicated shoes, their chicken sources are unreliable and few of them benefit from veterinary oversight. When examining the distance between backyard flocks and the nearest commercial poultry facility ND and MG were significantly more likely to be found in backyard flocks close (4 miles) while ORT was significantly more likely in backyard chickens located far (4 miles) from commercial poultry facilities. Birds purchased directly from NPIP hatcheries showed a reduced ND, MG, and MS antibody prevalence. Wearing dedicated shoes decreased MS antibody positive birds. Finally, history of wild bird contact had a clear effect on an increased seroprevalence of NDV and MG. This research shows the continued need to examine backyard poultry flocks and educate owners on practical management and biosecurity. Serological results suggest that backyard poultry flocks have the potential to serve as a reservoir or amplifier for poultry respiratory diseases.

Village chickens contribute considerably to the economy and to the nutritional requirements and livelihood of many rural farmers in developing countries across the globe. The spread of highly pathogenic avian influenza H5N1 into Africa during 2005/6 drew attention to the neglect of avian disease surveillance and research in countries such as Ethiopia, in which predominantly village chickens are reared. Several infectious and non-infectious diseases have limited the productivity of village chickens in Ethiopia, among which Newcastle disease (ND), caused by avian paramyxovirus serotype 1 (APMV-1), is the most important. Newcastle disease virus (NDV) causes subclinical to severe disease depending on the virus strain. To better understand the epidemiology of the disease, a study was performed in the mid-Rift Valley area of Oromia region, Ethiopia, to estimate seroprevalence and incidence of NDV exposure, identify risk factors, evaluate market trade movements and characterize circulating NDV strains. Repeated serological surveys in live bird markets revealed that village chickens were concurrently seropositive for several important infectious diseases, particularly during the wet season. The seroprevalence of ND, Pasteurella multocida infection, Mycoplasma gallisepticum infection and infectious bursal disease virus infection were 5.9%, 66.2%, 57.7% and 91.9%, respectively, during the dry season, and 6.0%, 63.4%, 78.7% and 96.3%, respectively, during the wet season. This underlines the need for a holistic approach to control of infectious disease in village chickens, and further studies are warranted to better understand the circulating strains, their interactions and their economic effect on village poultry production. A cross-sectional study using a multistage random sampling design with repeated sampling periods was done in households, along with a structured questionnaire. The prevalence of household flocks with at least one seropositive chicken was higher during the dry season (27.4%) than during the wet season (17.4%) ($P = 0.003$) while the proportion of flocks in which viral genome was detected was 24.2% and 14.2%, respectively. The prevalence of NDV genome detection in individual birds at markets varied from 4.9% to 38.2%, depending on the period of sampling and the reverse transcriptase polymerase chain reaction (RT-PCR) technique employed. Multilevel mixed-effect logistic regression models were used to identify risk factors for NDV seropositivity and for incidence of NDV exposure. Reduced frequency of cleaning of poultry waste, larger flock size and use of an open water source (pond or river) for poultry were associated with increased risk of NDV exposure or seropositivity, while maintaining a closed flock and the use of a grain supplement was associated with lower odds of seropositivity or a lower risk of NDV exposure. Molecular characterization and phylogenetic analysis, based on complete F and HN gene sequencing, was done on NDV isolates obtained at markets and villages. The circulating viruses had amino acid motifs characteristic of virulent strains, indicating endemic circulation of virulent virus in village chickens which poses a threat to improvement of village chicken production and emerging small-scale commercial poultry production. The strains clustered in genotype VI, branching with viruses from subgenotype VIb that commonly affect pigeons, although clustering apart on pairwise distance analysis. The apparent poor biosecurity in village chickens and history of isolation of pigeon variant viruses from domestic chickens in Ethiopia suggest that pigeons could play a role in the epidemiology of ND in village chickens. Further surveillance and virus characterization is required to shed more light on this. Bayesian methods were used to evaluate the performance of two commercial enzyme-linked immunosorbent assay (ELISA) kits (a blocking and an indirect ELISA) and haemagglutination inhibition (HI), in the absence of a gold standard, for their ability to detect antibodies to NDV in chicken serum from villages and live bird markets. The blocking ELISA had the highest sensitivity (Se) of 96.3% (95% posterior credible interval (PCI): 88.1; 99.8%), and specificity (Sp) of 98.9% (95% PCI: 97.8; 99.9%), while the HI had Se of 81.6% (95% PCI: 71.8, 91.9%), and Sp of 96.1% (95% PCI: 95.1; 96.6%). The indirect ELISA also had high Se (95.2%; 95% PCI: 88.5; 99.0%) but had very low Sp (8.9%; 95% PCI: 6.4, 11.8%). There is therefore a need for evaluation of commercial kits before their wider use in village chickens under field conditions. Market trade movement patterns for live chickens were described, using social network analysis, for two different periods during the year 2010, representing high (period one) and low (period two) seasons for poultry trade. The study revealed that the networks exhibited scale-free characteristics with weak connectivity of the markets and low density of the networks. The density for the two periods was not difference ($P = 0.29$), although a somewhat higher number of markets and links were observed during period one than period two. The low density of the networks indicates that in the event of infectious disease outbreaks in surroundings of the respective markets, the risk of its spread to many others would likely be fairly low. Nevertheless, the close similarity of NDV isolates from distant markets in the study area suggests that markets could play a role in the spread of infectious poultry diseases. A few markets were more central in the networks, in terms of their betweenness and out-degree; these markets could be considered for targeted surveillance, while those markets with high in-degree, mainly situated in the

larger urban centres, can be considered for surveillance that involves regular poultry traders.

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