

INFECTIOUS DISEASES OF POULTRY

The book contains information on all major prevalent, emerging and re-emerging infectious diseases of poultry in India. Information about epidemiology, causative agent, pathogenicity, post mortem findings, diagnosis and control has been exhaustively given. Historical information on all aspects of the disease gives information in proper perspective. Details of diagnostic procedures including information on control and management of infectious diseases made this book of practical use to the readers. Post mortem findings are useful tools in poultry disease diagnosis, which have been given in detail. Biosecurity majors required for control of highly infectious diseases have been given with practical hints for their implementation. Information about poultry vaccine production and schedule of vaccination of disease is given. Concurrent poultry diseases have been discussed adding to the value of the book. Contingency plans of control of diseases like Avian Influenza by international organizations like OIE are given in detail. The breeder and parent stock management requires different biosecurity and vaccination schedules. This book gives information about it.

The book is written by senior, experienced Veterinary Microbiologist having vast experience in the areas of health management including disease investigation, diagnosis, control and vaccine production. Each chapter is having special section on Indian Scenario, in which historical facts and real time experiences have been shared with the readers which makes this book more informative and unique. The book is useful for poultry specialists, microbiologists, professionals and students including farmers.

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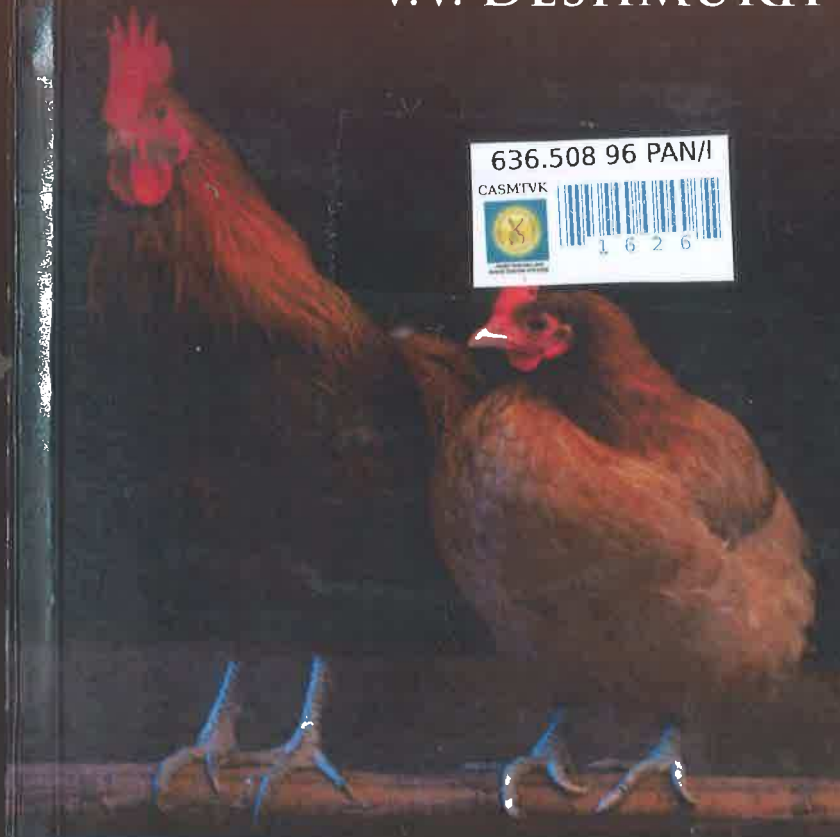
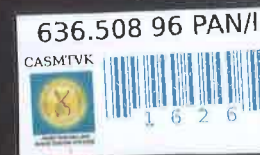
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Dr. Sharadkumar Vishnu Pandit was born on 6th October, 1936. He obtained B.V.Sc. (Hons.) Degree from Bombay University and M.V.Sc. (Bacteriology, Pathology and Parasitology) of Bombay University of 1st Batch in the year 1962. He received 2 Years Training in Virology, Serology & Tissue Culture Techniques at various research centres, Pune (ICMR-Rockefeller Foundation's joint collaboration) between 1964-1966. He also participated in a Summer Institute in Immunology at I.V.R.I., Mukteshwar (U.P.) during 1971.

He had visited Denmark, Germany, U.K. Italy, France and Iran as DANIA Fellow for Advanced Post Graduate Training Programme in Foot & Mouth Disease Vaccine Production. He was also trained in Advanced Technology related to production and testing of Poultry Vaccines including Marek's Disease Vaccines during 1990 at Tri Bio Laboratories & Main Biologicals in U.S.A.

He worked in various capacities at Disease Investigation Section, Maharashtra State, Pune for a period of 14 years (1960-1974), which also includes his technical services as Assistant Professor at Agriculture University of Kolhapur & at Poultry Training Centre, Kolhapur, ICAR's Mucosal Disease and Blue Tongue Disease Research Schemes, Mastitis Research Schemes and All India Co-ordinated project on F.M.D. typing (ICAR).

He has a deep insight in production, testing and development of various viral and bacterial vaccines against important disease of Cattle, Sheep and Goats like H.S., B.Q. Foot and Mouth Disease, Rinderpest, Brucellosis, Multi-factorial clostridial infections, etc. while working as Manager, Research & Development at Bharatiya Agro Industries Foundation's Vaccines Production Centre at Wagholi, Pune for a period of long 14 years (1974-1988).

He worked extensively for a very long period of 18 years (1988-2006) in Development, Production, Testing and Field Application of Poultry Vaccines including those against ND, IB, IBD, Marek's Disease (Freeze Dried & Cell Associated Vaccines), Fowl Cholera, Fowl Spirochetosis, Fowl Coryza, Salmonellosis and lastly most important newly emerged Inclusion, Body Hepatitis/Hydropericardium Syndrome (IBH/HPS) at Ventri Biologicals, Division of Venkateshwara Hatcheries Group, Pune.

He was nominated as a member of committee for suggesting measures for control of emerging diseases of poultry under the Taskforce established

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by Govt. of India (ICAR, New Delhi) during 1998. They suggested (recommended) various measures for controlling newly emerging diseases like Avian Influenza, Gumboro disease, CAA and Reo virus infections of poultry in India. Establishment of projects of reference laboratories for Surveillance of these Disease Agents at some Regional places was the outcome of this committee including recommendations for strengthening HSDL, Bhopal (1998).

He worked as a member of scientific programme committee for 20th World Poultry Congress held at New Delhi, India during 2nd-5th September, 1996. He also acted as Chief Organiser of the technical sessions of this Poultry Congress on the subject "Poultry Health-Epidemiology, Immunisation and Control Measures "at" Shahjahan Hall at Hotel Taj Palace.

He was a Technical Director of 2 Science films produced by Ventr Biological Division of Venkateshwara Hatchery, Pune, namely by i) Bio security programme for control of poultry diseases and ii) Production of poultry vaccines and their diluents, their reconstitution and vaccination techniques used in the field and vaccination schedules for Control of Poultry Diseases (1996). Similar film on production of live-stock diseases and their field use for control of livestock diseases was produced (Technical Direction) by the author (Dr. S.V. Pandit) and Dr. Devare when both of them were working at BAIF, Wagholi (1982).

He established fairly well-equipped laboratory facility at "Biospace" laboratories at Devachi Uruli, Pune with young enthusiastic Veterinarian Entrepreneur Dr. S.B. Salutgi (M.V.Sc.in Medicine) of Avians Trades, Pvt. Ltd. By 2012 for research work isolation and production of Bacteriophages for therapeutic use in control treatment of bacterial diseases of poultry and livestock like Salmonellosis and *E. coli* infections as well as strepto/staphylococcal infections of poultry and livestock. He also worked on use of *B. thuringensis* for control of Domestic fly problem in poultry houses. He and S.B. Salutgi also developed technology for production of Silver Nano particles for control of Bacteriological problems in poultry (Salmonell/E.coli/Pasturella).The said work was done from November, 2009 to March, 2017.

He published few papers in technical journals including paper on "Development of Brucellalysate" for allergic test in Pigs (Dr. G.P. Sen of IVRI, Mukteshwar as Co-author). He participated in very large number of technical seminars of National / International importance and presented papers on subjects like Foot & Mouth Disease Virus typing, IBH/HPS Vaccine Development, Diagnostic Tests for Rinderpest and Mucosal Disease, Nephrotropic IB Vaccine, Diagnosis of Infections

Laryngio-trachaeitis. Author presented valuable papers on IBD Vaccine Development, IBH/HPS Vaccine Development in Symposia at IVRI as well as at World Poultry Science Congress held at New Delhi, in 1988. He also worked on newly emerging diseases like IBD, Chicken Anemia Agent (CAA) & Reo Virus Infections in Poultry.



Dr. V.V. Deshmukh is working as Professor of Veterinary Public Health & Epidemiology in Maharashtra Animal & Fishery Sciences University at College of Veterinary & Animal Sciences, Parbhani. He started his career as Assistant Professor of Veterinary Microbiology at College of Veterinary & Animal Sciences, Udgir in the year 1987. He then worked as Junior Scientist at Animal Disease Research Centre, Parbhani from 1994 to 2000. He was Associate Professor of Veterinary Microbiology from 2000 to 2008. He became Professor of Veterinary Public Health & Epidemiology in the year 2008.

He is having vast experience in disease diagnosis, surveillance, epidemiology, vaccinology of livestock and poultry diseases. He worked on FMD virus at ICAR, AICRP on FMD at DIS, Pune. Then, worked as Co-PI of ICAR Ad-hoc research project on 'Bluetongue in Ruminants' during 1994-1997. He was a PI of Parbhani Centre of ICAR, All India Network Programme on 'Bluetongue Disease' from 2001 to 2015. His major contribution was isolation of BTV-1, BTV-4 and BTV-18 from field outbreaks and a stakeholder in BT vaccine development under the programme.

He established Department of Veterinary Public health & Epidemiology at COVAS, Parbhani in the year 2008. A well-equipped Public health Lab was started with post graduate programme at the institute.

He has guided around 28 M.V.Sc. students, published large no. of research articles in national & international journals. He is a Ph.D. and M.V.Sc. paper setter, Thesis evaluator of no. of State universities and IVRI. He travelled to U.S.A., U.K. and Malaysia for professional assignments. His work has been recognized by Dr. D. S. Gorhe State Level Best Veterinary Teacher and Researcher Award of Senior Veterinarian Foundation, Pune (2014). Shyama Singh and Balamati Devi Memorial Award for Excellence in Animal Health Care and Cover by Indian Association for the Advancement of Veterinary Research (2016).

Preface

Poultry sector in India is broadly divided into two sub-sectors - one with a highly organized commercial sector with about 80 per cent of the total market share and the other being unorganized with about 20 per cent of the total market share. The egg production in the country has increased from around 83 billion nos. in 2015-16 to around 88 billion in 2016-17 registering a growth of about 6%. The per capita availability of egg has increased from 61 in 2013-14 to 66 in 2015-16. In 2016-17, it is 69. The broiler production is around 4.5 million tons which is approximately seven per cent more from last year possibly because of rising domestic demand for poultry meat. The growth in the broiler segment is expected to remain strong due to consumer preference for poultry, increasing income levels, and changing food habits. The live market sales of broiler meat still constitute more than 90-95 per cent of total volume of sales; the processed chicken meat segment comprises only about 5% of total production.

In recent times, Govt. of India has launched a massive Action Plan for Doubling Farmers Income by the year 2022. The Plan requires major emphasis on Health Sector. Infectious diseases of poultry play an important role in production. Prevention and control of infectious diseases require knowledge about various aspects of infectious diseases like aetiology, symptoms, postmortem signs, disease diagnosis, vaccination, etc. A lot of information about various infectious diseases of poultry is available now-a-days. However, information from experienced, senior professionals with their experiences may help in understanding poultry infectious diseases.

This book contains chapters on all major poultry diseases which are prevalent in India. The uniqueness of this book is that in addition to the description, valuable practical tips evolved out of experience of authors have been given. This makes the book valuable from field point of view. This book is meant for field veterinarians, students and professionals for reference. An attempt has been made to keep reader updated on historical facts, recent advances and practical hints on various infectious diseases of poultry endemic in the country. Poultry professionals are facing lots of problems due to emerging and re-emerging infectious diseases. This book will give an insight to the reader for better understanding of the problem.

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Dr. S.V. Pandit, one of the author also takes this opportunity to express his gratitude towards his mentors, namely Late Dr. S.N. Sapre, its Director, D.I.S. (M.S.), Pune, Late Dr. S.G. Dixit, Ex. Dy. Director, IVBP, Pune, Late Dr. D.S. Gorha, Ex. Chief Executive, B.A.I.F.S F.M.D. Vaccine Project Wagholi, Dr. N.S. Dutt, Ex. General Manager, BAIFS, F.M.D. Vaccine Project, Wagholi, Late Dr. B.D. Survashe, Chief Executive, Ventri Biological of Venkateshwar Hatchery Ltd., Pune.

Dr. S.B. Salutgi, Director "Bio-space" Labotatory (Avians Drades Pvt. Ltd.), Pune, Dr. K.M. Pawar Madam, Ex. Director, NIV, Pune, Dr. S.V. Pandit has no suitable words to Express how he should acknowledge Late Dr. Manibhai Desai, Founder of BAIF, Wrali Kanchan, Late Dr. B.V. Rao, Founder of Venkateshwara Hatcherias Group, Pune without whose support his technical ambitions would not have materialized.

The authors are thankful to Mr. Milind S. Pandit and Mr. Manwatkar for their assistance in typing of this book.

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