



RECENT TRENDS IN POULTRY PRODUCTION

This book provides a platform for the exchange of new ideas and novel information on the recent development in poultry sector. This book aims at giving emphasis to all recent, novel and innovative research on poultry nutrition, poultry breeding, avian disease, post-harvest technology and sustainable poultry production in view of poultry welfare in the country. The major theme of the book is "Conceptual understanding and future strategies for welfare friendly Poultry Production in India". This book content lead papers and expert opinion on various latest aspect of Poultry Science. Emphasis has been given to include the areas of Poultry Genetics, Breeding and Biotechnology; Poultry Nutrition, Physiology and Livelihood; Poultry Disease and Health; Poultry Housing, Management and Post-harvest Technology; Rural Poultry Extension, Economics and Marketing and Climate Change, Environmental Hygiene, Welfare and Waste Utilization, etc. This book is equally beneficial for researchers, scientists as well as students preparing for various competitive examination of ICAR, New Delhi related to various aspects of poultry science.

Dr. S. P. Tiwari
Dean Faculty

College of Veterinary Science and Animal Husbandry,
CGKV, Anjora, Durg – 491001 (Chhattisgarh)

Dr. O.P. Dinani

Assistant Professor, Department of ILFC
College of Veterinary Science and Animal Husbandry,
CGKV, Anjora, Durg – 491001 (Chhattisgarh)



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S. P. TIWARI
O. P. DINANI

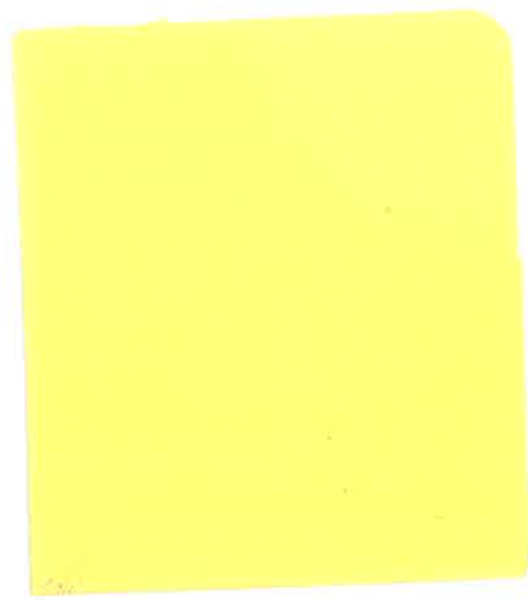


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S. P. TIWARI

O. P. DINANI

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Authors:

Dr. S. P. Tiwari

Dean Faculty

College of Veterinary Science and Animal Husbandry,
CGKV, Anjora, Durg - 491001

Dr. O.P. Dinani

Assistant Professor, Deptt. of ILFC

College of Veterinary Science and Animal Husbandry,
CGKV, Anjora, Durg - 491001



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In association with :

Indian Poultry Science Association

Central Avian Research Institute

Izatnagar-243 122 (Uttar Pradesh)

© Publisher

ISBN 978-93-88892-49-0

e-ISBN 978-93-88892-50-6

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Composed, Designed & Printed in India

Foreword

Poultry is one of the fastest growing segment of the agriculture sector in India and many other countries. The scientific breakthrough resulted in development of poultry production, even under adverse climatic conditions, which transformed the poultry from rural farming to full fledged industry in India. India's contribution to world's egg and chicken production is nearly 4 and 2%, respectively, whereas poultry sector contributes 1% to national GDP and 10% of total livestock GDP. The present poultry production is supported by 600 hatcheries, 60,000 poultry farmers holding intensive poultry production and about one lac farmer families keeping a flock of 5-250 birds. The present per capita availability is far below the ICMR recommended level of 180 eggs and 11 kg meat. Private sector partnership in poultry production through contract farming systems and the vertical integration has played a major role in this spectacular growth, especially in southern and western states of India. Sustainable poultry production achieved through the import of pure lines/grandparent stocks, least cost feed formulation, introduction of vaccines against major diseases, availability of support services, improved quality breeder management, contract system of feeding and developments in poultry processing plants and further processing.

This book "**Recent Trends in Poultry Production**" has been articulated in the event of **XXXVI Annual Conference of Indian Poultry Science Association on "Conceptual understanding and future strategies for welfare friendly poultry production in India" December 11-13, 2019** organized by College of Veterinary Science and Animal Husbandry, CGKV, Anjora, Durg and Indian Poultry Science Association, Izatnagar, U.P. I congratulate editors of the book Dr. S.P. Tiwari, Dean Faculty and Organizing Secretary and Dr. O.P. Dinani, Co-organizing Secretary of this event to publish this book containing lead papers and expert views from various aspects of Poultry Science in the country.

I am sure the efforts of the learned speakers of lead papers will enrich and sensitize the budding professionals and also update the technical knowledge of field veterinarians, faculty, PG and Ph.D. students in the field of poultry production.

I congratulate the entire team and wish the **XXXVI Annual Conference of Indian Poultry Science Association** a grand success.

Prof. (Dr.) N.P. Dakshinkar
Hon'ble Vice Chancellor
CGKV, Durg

Preface

This book "**Recent Trends in Poultry Production**" has been prepared in the event of **XXXVI Annual Conference of Indian Poultry Science Association on "Conceptual understanding and future strategies for welfare friendly poultry production in India"** December 11-13, 2019 organized by College of Veterinary Science and Animal Husbandry (CGKV) Durg & Indian Poultry Science Association, Izatnagar, U.P. This book content lead papers and expert opinion on various latest aspect of Poultry Science. Emphasis has been given to include the areas of Poultry Genetics, Breeding and Biotechnology; Poultry Nutrition, Physiology and Livelihood; Poultry Disease and Health; Poultry Housing, Management and Post-harvest Technology; Rural Poultry Extension, Economics and Marketing and Climate Change, Environmental Hygiene, Welfare and Waste Utilization, etc.

Editors are greatly thankful to the almighty and their parents for their inspiration. Editors are thankful to their teachers. Editors are highly thankful to the persons mentioned in the references along with authors, if forgotten to be acknowledged. Information given in the book is based on knowledge and understanding of the subject of various experts. However, editors are not responsible for any topographical error or other mistakes. Please consult the reference books and research papers for further information. Editors are greatly acknowledged to authors of relevant chapters contributed in this book. Thanks to all who directly and indirectly contributed to this book. Writers of concern chapters are solely responsible for originally of their contents.

We are highly thankful to **Dr N.P.Dakshinkar**, Hon'ble Vice Chancellor, Chhattisgarh Kamdhenu Vishwavidyalaya, Durg for their guidance, encouragement and moral support for preparation of this book.

Dr. S.P. Tiwari
Dr. O.P. Dinani

List of Contributors

S. No.	Title	Author Name	Institute
1.	Duck Production: An Overview	A. Jalaludeen ¹ and R. Richard Churchil ²	¹ Former Director of Academics and Research, Kerala Veterinary and Animal Sciences University, Pookot, Wayanad, Kerala State and ² Department of Poultry Science, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University, Chennai, Tamil Nadu State
2.	Marek's Disease: A Serious Challenge	J. L. Vegad	Adviser, Phoenix Group, Jabalpur; Former Professor and Head, Department of Pathology, Veterinary College, Jabalpur-482001
3.	Sustainable Improvement in Backyard Poultry Production through Breeding Strategies	R. N. Chatterjee and Santosh Haunshi	ICAR-Directorate of Poultry Research, Rajendranagar, Hyderabad-500030
4.	Diversified Poultry Production - An Overview	R. Prabakarana ¹ , S. Ezhilvalavan ² and A. K. Thiruvankadan ³	¹ Former Vice-Chancellor, TANUVAS, Chennai-51 ² Professor, Poultry Research Station, TANUVAS, Chennai-51 ³ Professor, Dept. of AGB, VC&RI, Namakkal-2
5.	Recent Advances in Poultry housing Practices	D. Narahari	Former Professor & Head, Dept. of Poultry Science, Madras Veterinary College, Chennai-600007
6.	Value Addition of Chicken Eggs	K. Mani and S. Ezhilvalavan	College of Poultry Production and Management, Hosur Tamil Nadu Veterinary and Animal Sciences University

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| 7. | Role of biosecurity in poultry disease prevention | Ajit Singh Yadav | Avian Medicine section, ICAR-Central Avian Research Institute, Izatnagar-243122 (UP) |
| 8. | Implication of welfare research on commercial layer production in India | S K Bhanja | ICAR-Central Avian Research Institute, Izatnagar, UP-243 122 |
| 9. | Conceptual understanding and future strategies for welfare friendly poultry production in India | T. Sujatha, A. Kundu and Jai Sunder | Division of Animal Science, ICAR-Central Island Agricultural Research Institute, Port Blair, 744105, A&N Islands |
| 10. | Value addition of poultry meat: a promising conception in poultry industry | Vikas Pathak, Sanjay Kumar Bharti and Meena Goswami | U.P. Pandit Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go-Anusandhan Sansthan (DUVASU), Mathura-281001 |
| 11. | HACCP Guidelines for Clean Poultry Meat Production | Jai Sunder and T. Sujatha | ICAR-Central island Agricultural Research Institute, Port Blair |
| 12. | Waste Profiling and Its Input Oriented Sustainable Management: A Perspective in Indian Context | E.B. Chakurkar ¹ , Nibedita Nayak ¹ , Amandeep Singh ² , R. Maruthadurai ¹ and G.Mahajan ¹ | ¹ Director(A), ICAR-Central coastal agricultural institute(CCARI),Goa (403402) ² Veterinary Assistant Surgeon, Department of Sheep Husbandry, Govt of J & K (181102) |
| 13. | Antibiotic Free Poultry Meat and Egg Production – The Nutritional Approach | A. Natarajan | Veterinary College and Research Institute, Namakkal, Tamil Nadu Veterinary and Animal Sciences University-637 001 |
| 14. | Feed Safety and Nutritional Security for Welfare Friendly Poultry Production in India | Sita Prasad Tiwari and Om Prakash Dinani | College of Veterinary Science and A.H. Anjora, Chhattisgarh Kamdhenu Vishwavidyalaya, Durg-491 001 |

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| 15. | Novel protein and energy alternate feed sources for welfare friendly poultry production | Pramod K. Tyagi ¹ , O.P.Dinani ² and S.P. Tiwari ² | ¹ ICAR-Central Avian Research Institute, Izatnagar (UP), 243122 ² Chhattisgarh Kamdhenu Vishwavidyalaya, Durg |
| 16. | Utilization of Nonconventional Feed Resources (NCFR) for Poultry Feeding in the Tropics | R.P.S. Baghel and Anchal Keshri | College of Veterinary Science and Animal Husbandry, Mhow |
| 17. | Nutrient Requirements for Japanese Quail | S.C. Edwin | Veterinary College and Research Institute (TANUVAS), Tirunelveli |
| 18. | Nutrient Requirements and Future Trends in Poultry Nutrition | A.V. Elangovan | ICAR-National Institute of Animal Nutrition and Physiology, Bangalore |
| 19. | Present Status and Future Prospects of Ratite Farming | S.T. Selvan, K. Premavalli and S. Prakash | Post Graduate Research Institute in Animal Sciences, Tamil Nadu Veterinary and Animal Sciences University, Kattupakkam-630 203 |
| 20. | Role of Nano-Selenium in Poultry Production | S.K. Mishra, K. Sethy, R.K. Swain, N.C. Behura and Swetapatra Biswal | College of Veterinary Science and Animal Husbandry, Orissa University of Agriculture and Technology, Bhubaneswar-751003, Odisha |
| 21. | Advances in Avian Transgenesis | R. Richard Churchil | Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University, Chennai- 7 |
| 22. | Gut health for profitability, animal welfare and sustainability in modern poultry production | Ajay Awati | EW Nutrition, GMBH Hogenbögen 1, 49429, Visbek, Germany |

23. Poultry Extension Services and Technology Transfer Shahaji Phand¹ and P.V.K. Sasidhar² ¹Assistant Director, MAANGE, Hyderabad² Director, School of Extension and Development Studies, IGNOU, New Delhi
24. Prospective of exogenous enzymes and organic acid additives in poultry farming Sunit Nayak, Digvijay Singh, Ankur Khare, Ravi Prakash Pal, Amit Kumar Chaurashiya Department of Animal Nutrition, College of Veterinary Science and Animal husbandry, NDVSU, Jabalpur (M.P.)
25. Backyard Poultry Farming: A Potential Tool for Doubling the Income of Farmers Mohan Singh, S.P. Tiwari and Kaiser Parveen College of Veterinary Science & A.H., Anjora, Durg-491 001
26. An overview on Chicken infectious anaemia virus P.N. Dwivedi, Gurpreet Kaur and Sreekala S. Mohandas Department of Veterinary Microbiology, College of Veterinary Science, GADVASU, Ludhiana-141004 (Punjab)
27. Importance of gut health in chickens and its management N.V. Kurkure and M. M. Kadam Nagpur Veterinary College, Maharashtra Animal and Fishery Sciences University, Nagpur 440 006
28. Immuno-Modulators: A Natural Approach Towards Anti-Microbial Resistant in Poultry Girraj Goyal¹ and O.P. Dinani² ¹College of Veterinary Science & A.H., Rewa-486001, Madhya Pradesh ²Chhattisgarh Kamdhenu Vishwavidyalaya, Durg, Chhattisgarh
29. Advances in Molecular Techniques and Automation in Poultry Sector Amiya Ranjan Sahu and Pranab Jyoti Das Animal Genetics and Breeding, Division, ICAR-National Research Centre on Pig, Guwahati, Assam
30. Recent Advances in the Anaesthetic and Surgical Management of Commonly Occuring Surgical Ailments in Avians S. K. Tiwari¹ and Deepak Kumar Kashyap² ¹Director Instruction and Professor of Veterinary Surgery and Radiology, CGKV, Durg-491 001 ²Ph.D. Scholar, Department of Veterinary Surgery and Radiology, CGKV, Durg-491 001

31. Nanoparticle in Advanced Therapeutics M.Roy¹, S. Roy², and S.P. Tiwari³ ¹Associate professor, Veterinary Physiology and Biochemistry Department² Professor, Veterinary medicine Department³ Dean Faculty, College of Veterinary science & A.H., Anjora, Durg College of Veterinary science & A.H., Anjora, Durg (Chhattisgarh) 491001
32. Recent Advances in Poultry Housing Mukund Kadam¹, Jaydip Rokade², Monika, M.³ and O.P. Dinani⁴ ¹Nagpur Veterinary College, Nagpur²ICAR-CARI, Izatnagar³ICAR-CARI, Izatnagar⁴College of Veterinary Science & A.H., Anjora, Durg
33. Planning and Policy Perspectives for Indian Poultry Sector P.K.Shukla¹, Amitav Bhattacharyya² and Sujit Nayak³ ¹Registrar, Dean PGS & Head, Poultry Sciences, DUVASU, Mathura ²Assistant Professor, Poultry Science, DUVASU, Mathura³ Assistant Commissioner (AH), Ministry of Fisheries, Animal Husbandry, & Dairying Government of India, Krishi Bhavan, New Delhi,
34. Climate change and Poultry Production Vishal Mudgal¹ and Anand Kumar Pathak² ¹Senior Scientist, ICAR - Central Institute for Research on Buffaloes, Hisar, 125 001, Haryana²Division of Animal Nutrition and Feed Technology Assistant Professor (Senior Scale), Faculty of Vety. Sc. and A.H., SKUAST, Jammu

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Chapter 1

Duck Production: An Overview

A. Jalaludeen¹, Ph.D and R. Richard Churchil², Ph.D

¹ Former Director of Academics and Research, Kerala Veterinary and Animal Sciences University, Pookot, Wayanad, Kerala State, India

² Professor, Department of Poultry Science, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University, Chennai, Tamil Nadu State, India

Introduction

Ducks are important poultry species in many developing countries by virtue of their hardiness to diseases, long production year, large sized eggs, early morning egg laying character and their habit of foraging on aquatic plants and snails. They are suitable for integrated farming systems. They flourish well in marshy and wet lands. Along with other scavenging poultry species, ducks play a vital role in meeting daily protein needs and producing household income of farm families in the mixed farming systems of many developing countries. It is considered to be the women's enterprise in small holder farming systems. Although a number of potential advantages, duck farming is decreasing year after year in India which could be due to scarce scavenging areas and natural feed resources, drying up of natural water bodies, excessive use of chemicals in crop fields, less Govt. support, etc. Nomadic duck production is still on a traditional system, location specific technological interventions are to be carried out to refine the existing practices (Rahman *et al.*, 2017). Ducks and other water fowls are of great importance for food security of mankind in many parts of the world as elaborated by Pingel (2009).

Breeds of ducks

Asia keeps tremendous variety of duck breeds, such as Shaoxing, Jingdin, Shanma, Liancheng, Bai and Gaoyou duck in China (Ma and Zhao, 1998), Tsaiya in Taiwan, Alabio and Tegal ducks in Indonesia, Itik Jawa in Malaysia, Chara and Chemballi varieties of Kuttanad