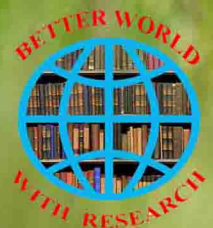


Frontiers on Recent Developments in Poultry Science

Edited by:

Dr. Seyedmousa Hosseini



Frontiers on Recent Developments in Poultry Science

Edited by:

Dr. Seyedmousa Hosseini

Islamic Azad University, Department of Animal Science,
Qaemshahr Branch, Iran



**World Science and
Research Publishing**

Published by:
World Science and Research Publishing

©2023 by World Science and Research Publishing. All Rights Reserved.
ISBN: 978-622-94331-5-7

Library of Congress Cataloging-in-Publication Data

Frontiers on Recent Developments in Poultry Science

Edited By: Dr. Seyedmousa Hosseini

Includes Bibliographical references and index.

Contents: Poultry Science

1. Animal Well-Being And Behavior
2. Genetics And Molecular Biology
3. Immunology, Health And Disease
4. Management And Production
5. Metabolism And Nutrition
6. Microbiology And Food Safety

ISBN: 978-622-94331-5-7

©2023 by World Science and Research Publishing

This book contains information obtained from authentic and highly regarded sources. Reprinted material is quoted with permission, and sources are indicated. A wide variety of references are listed. Reasonable efforts have been made to publish reliable data and information, but the author and the publisher cannot assume responsibility for the validity of all materials or for the consequences of their use.

All rights reserved. No part of this book may be reprinted, reproduced, transmitted, or utilized in any form by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying, microfilming, and recording, or in any information storage or retrieval system, without written permission from the publishers.



World Science and Research Publishing
Visit our web site at www.wsrpublishing.com

CONTENTS

Preface	i
List of Contributors	ii

Section 1: Genetics, Physiology and Reproduction

Chapter 1: Production and Physiological Parameters of Broiler Chickens Administered Chilled Drinking Water under High Ambient Temperature during Finisher Period.....	1
Chapter 2: Effect of Flock Age on Reproductive Traits of Shika Brown® Chicken.....	20
Chapter 3: Estimating Heritability of Semen Quality Traits in Crossbred Chickens	30
Chapter 4: Growth Performance of F1 and F2 Crosses of Horro, Potchefstroom Koekoek, and Bovan Brown Chicken Breeds under Intensive Management System.....	53

Section 2: Metabolism and Nutrition

Chapter 5: Performance, Lymphoid Organ, and Carcass Characteristics of Broiler Chicken as Affected by Feed Supplementation with Vitamin C and Vitamin E.....	77
Chapter 6: Influence of Feed Additive Supplementation on Growth Response, Gut Health, and Meat Quality of Broiler Chicken	98
Chapter 7: Effect of Ronozyme® Wx (Ct) Supplementation on Apparent and True Ileal Amino Acid Digestibility Coefficients in Broiler Chicks Fed Varying Levels of Rice Bran	137
Chapter 8: Impact of Phytase Enzyme Usage on Performance and Egg Quality of Laying Hens	159

Chapter 9: Effect of Using Different Levels of Sweet Potato Tubers as a Source of Energy on Performance and Carcass Characteristics of Broiler Chicken	172
Chapter 10: Substitution Effect of Soybean Meal (Glycine Max) With Different Level of Dried Water Velvet (Azolla Pinnata) Meal on Egg Production and Egg Quality Parameter of Potchefstroom Koekoek Layer.....	192

Section 3: Management and Production

Chapter 11: Comparative Study of Two Nigerian Indigenous Chickens: Body Weight and Linear Body Measurements	211
Chapter 12: Egg Production Performance of Improved Horro Chicken Crossed with Koekoek and Kuroiler Breeds	240
Chapter 13: Evaluation of Egg Quality from Exotic and Local Chicken Farm Gate and Market	282
Chapter 14: Evaluation of Three Final Hybrid Layer Chicken Strains under On-Station Management	271
Chapter 15: Effects of Short Periods of Incubation during Egg Storage (SPIDES) in Prolonged Stored Eggs of Late DeKalb Breeder on Hatchability, Embryonic Mortality and Chick Quality	290

PREFACE

Poultry has been on the earth for over 150 million years, dating back to the original wild jungle fowl. Poultry provides humans with companionship, food, and fiber in the form of eggs, meat, and feathers.

The interest in poultry and poultry products has grown tremendously in the last 20 years. Almost every country in the world has a poultry industry of some kind. Poultry is one of the fastest-growing segments of the agricultural sector in the world.

The poultry sector is possibly the fastest-growing and most flexible of all livestock sectors.

This has become important because of the increasing demand for poultry meat and eggs as healthy proteins.

The contents of this book cover key areas and relevant information necessary for poultry science and mainly focus on practical-oriented concepts and new science and technic in breeding. This book contains various materials suitable for students, researchers, nutritionists, scientists, veterinarians, and academicians in the field of poultry science.

Seyedmousa Hosseini

Islamic Azad University

Qaemshahr Branch

Iran

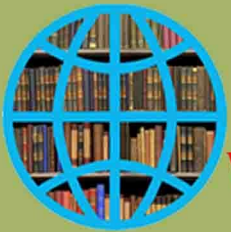
List of Contributors
(Sort by Name)

Abdelbasit B. Habib	Department of Poultry Production, College of Animal Production, University of Bahri, Khartoum, Sudan
Abegaz Beyene	Jimma University, College of Agriculture and Veterinary Medicine, Jimma, Ethiopia
Abraham C. Ugochukwu	Federal University of Technology, Department of Animal Science and Technology, P. M. B. 1526, Owerri, Imo State, Nigeria
Abubakr. S. Ali	Sudan University of Science and Technology, College of Animal Production Science and Technology, Sudan
Adebisi F. Agboola	Department of Animal Science, University of Ibadan, Ibadan, Oyo State, Nigeria
Adedoyin E. Adebisi	Department of Animal Science, University of Ibadan, Ibadan, Oyo State, Nigeria
Adewale Iyanwura Adeolu	Department of Agriculture (Animal Science Programme), Alex Ekwueme Federal University, Ndufu-Alike Ikwo, Abakaliki, Ebonyi State, Nigeria
Ahmed Seid	Jimma University, College of Agriculture and Veterinary Medicine, Jimma, Ethiopia
Aishatu Aliyu Kwaido Kwaido	Department of Animal Science, Kebbi State University of Science and Technology Aliero, Nigeria
Alemayehu Guteta Sufe	Ethiopian Institute of Agricultural Research, Bishoftu Agricultural Research Center, P.O. Box 32, Bishoftu, Ethiopia
Atif A. Hamza	Poultry Research Section, Animal Production Research Center, Animal Resources Research Corporation, Sudan
Badr H. Eljack	Sudan University of Science and Technology, College of Animal Production Science and Technology, Sudan

Chinedu Anenechukwu Nwankwo	Department of Animal Science and Technology, Faculty of Agriculture, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria
Elfadil A. Adam	Sudan University of Science and Technology, College of Animal Production Science and Technology, Sudan
Elham M. Yusif	Department of Poultry Production, College of Animal Production, University of Bahri, Khartoum, Sudan
Emmanuel U. Ahiwe	Federal University of Technology, Department of Animal Science and Technology, P. M. B. 1526, Owerri, Imo State, Nigeria
Fadwa Bentaher	Faculty of Education, University of Tripoli, Libya
G.O. Oyebode	Department of Animal Science, University of Ibadan, Nigeria
Gabriela C. Iheanacho	Federal University of Technology, Department of Animal Science and Technology, P. M. B. 1526, Owerri, Imo State, Nigeria
Gebeyehu Goshu	Addis Ababa University, College of Veterinary Medicine and Agriculture, Bishoftu, Ethiopia
Haytham H. Abdelwahid	Department of Animal Breeding & Reproductive Technologies, College of Animal Production, University of Bahri, Khartoum, Sudan
Henry Okechukwu Ukwu	Department of Animal Breeding and Physiology, Federal University Agriculture, Makurdi, Benue State, Nigeria
Idris Ibrahim Adamu	Department of Agriculture and Natural Resources, Chanchaga Local Government, Minna, Nigeria
Innocent Ejiofor	Federal University of Technology, Department of Animal Science and Technology, P. M. B. 1526, Owerri, Imo State, Nigeria

Mahmud Elraghig	Faculty of Veterinary, Medicine University of Tripoli, Libya
Maticha Korato	Department of Animal Science, Bonga University, Bonga, Ethiopia
Mebratu Yigzaw	Injibara University, college of Agriculture, climate and food science, Injibara, Ethiopia
Misba Alewi	Ethiopian Institute of Agricultural Research (EIAR), Debre Zeit Agricultural Research Center, Bishoftu, Ethiopia
Mohamed Aliy	Jimma University, College of Agriculture and Veterinary Medicine, Jimma, Ethiopia
Mohamed Mansur	Faculty of Education, University of Tripoli, Libya
Mujahed Bushwereb	Faculty of Veterinary, Medicine University of Tripoli, Libya
Mutaz S. Babiker	Department of Poultry Production, Faculty of Animal Production, University of Gezira, Wad Madani, Sudan
Nazif Amza	Mizan-Tepi University College of Agriculture and Natural Resource, Ethiopia
Olaitan G. Otunla	Department of Animal Science, University of Ibadan, Ibadan, Oyo State, Nigeria
Olayemi R. Awodoyin	Department of Animal Science, University of Ibadan, Ibadan, Oyo State, Nigeria
Olive O. Nwaogu	Federal University of Technology, Department of Animal Science and Technology, P. M. B. 1526, Owerri, Imo State, Nigeria
Onyemauchechi Mercy Obike	Department of Animal Breeding and Physiology, Michael Okpara University Agriculture, Umudike, Abia State, Nigeria
Osama E. Yassin	Sudan University of Science and Technology, College of Animal Production Science and Technology, Sudan
Richard Omidiwura	Department of Animal Science, University of Ibadan, Nigeria

S.N. Ibe	Department of Animal Breeding and Physiology, Michael Okpara University Agriculture, Umudike, Abia State, Nigeria
Saidu Suleiman	Department of Animal Science, Kebbi State University of Science and Technology Aliero, Nigeria
Salim G. Ahmed	Department of Poultry Production, College of Animal Production, University of Bahri, Khartoum, Sudan
Shambel Taye	Ethiopian Institute of Agricultural Research (EIAR), Debre Zeit Agricultural Research Center, Bishoftu, Ethiopia
Sisaynesh Gudeta	Jimma University, College of Agriculture and Veterinary Medicine, Jimma, Ethiopia
Solomon Abegaz	Ethiopian Institute of Agricultural Research (EIAR), Debre Zeit Agricultural Research Center, Bishoftu, Ethiopia
Solomon Demeke	Jimma University, college of agriculture and veterinary medicine, Jimma, Ethiopia
T.O. Makinde	Department of Animal Science, University of Ibadan, Nigeria
Tobechukwu C. Iwuji	Federal University of Technology, Department of Animal Science and Technology, P. M. B. 1526, Owerri, Imo State, Nigeria
Ugwumba Chijioke Isaac	Department of Animal Science and Technology, Faculty of Agriculture, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria
Waheed Akin Hassan	Professor , Department of Animal Science, Kebbi State University of Science and Technology Aliero, Nigeria
Wasihun Hassen Abate	Jimma University, College of Agriculture and Veterinary Medicine, Jimma, Ethiopia
Zainelabdin A. Elnour	Department of Poultry Production, Faculty of Animal Production, University of Gezira, Wad Madani, Sudan



**World Science
and Research Publishing**

Copyright ©2023 by World Science and Research Publishing



9786229433157