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Embryo development and hatchery practice in poultry production



Editor: Dr Nick French

This collection reviews the latest research on embryo development, as well as the effects of incubation and the hatching stage on chick health, welfare and production traits.

Print ISBN: 978-1-80146-252-5 Pub. Date: May 2023 eBook ISBN: 978-1-80146-254-9 Price: £150/\$195/€180 Pages: 504 Series No: 134

CHAPTER TITLES

Part 1 Parental influences and embryo development; 1.Genetic selection to improve reproductive traits in chickens; 2.Managing breeder poultry flocks to optimise hatchability and chick health; 3.Advances in understanding the development of defences against pathogens in the chicken egg; 4.Assessing poultry semen quality; 5.Key stages of embryo development in poultry; 6.Chicken egg storage and transport; 7.In ovo sexing in poultry chicks; 8.In ovo vaccination of chicken eggs; **Part 2 Incubation**; 9.Incubator design for poultry eggs: principles and techniques; 10.Understanding the effects of incubator temperature on embryo and post-hatch chick development; 11.Understanding the effects of light on embryo and posthatch chick development; 12.Understanding the effects of humidity/air composition on embryo and post-hatch chick development; 13.The role of egg turning in embryo development; 14.Poultry embryo development and skeletal growth; **Part 3 Managing the hatching stage**; 15.Managing the poultry hatcher environment; 16.Alternative hatching systems for broilers; 17.Key issues in transportation of broiler and layer chicks



Improving poultry meat quality



Editors: Professor Massimiliano Petracci, Alma Mater Studiorum -Università di Bologna, Italy and Dr Mario Estévez, Universidad de Extremadura, Spain

This collection summarises recent research on genetic and environmental factors affecting the development of quality traits in poultry meat and their implications for breeding, husbandry and postharvest processing.

Print ISBN: 978-1-80146-103-0 Pub. Date: December 2022 eBook ISBN: 978-1-80146-106-1 Price: £150/\$195/€180 Pages: 414 Series No: 127

CHAPTER TITLES

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Optimising poultry flock health



Optimising poultry flock health Edited by Professor Spark de Wit, Royal GD and University of University, The Netherlands



Editor: Professor Sjaak de Wit, Royal GD and University of Utrecht, The Netherlands

This collection reviews the range of recent research on improving our understanding of the mechanisms of disease transmission and how this understanding can be used to improve poultry flock health.

Print ISBN: 978-1-78676-887-2 Pub. Date: September 2022 eBook ISBN: 978-1-78676-890-2 Price: £150/\$195/€180

Pages: 414 Series No: 119

CHAPTER TITLES

Part 1 Understanding infectious diseases in poultry; 1.Understanding the molecular biology of avian viruses and their role in poultry health; 2.Advances in understanding bacterial diseases in poultry: challenges and perspectives; 3.Advances in understanding parasite infections of poultry; protozoa and the red mite; Part 2 Preventing diseases in poultry; 4.Improving biosecurity in poultry flocks; 5.Nutritional strategies to boost immune response in poultry; chevelopments in vaccines to protect poultry against diseases; Part 3 Optimising health at differing stages in poultry production; 7.Optimizing the health of broilers; 8.Optimizing the health of poultry layers; 9.Optimizing the health of broiler breeder birds



Understanding the behaviour and improving the welfare of chickens

Editor: Professor Christine Nicol, Royal Veterinary College - University of London, UK

This volume summarises the wealth of recent research completed on understanding chicken behaviour and discusses how best to use this rich body of knowledge to optimise welfare management of broilers and layers.

Print ISBN: 978-1-78676-422-5 Pub. Date: September 2020 eBook ISBN: 978-1-78676-425-6 Price: £170/\$220/€205 Pages: 688 Series No: 91

CHAPTER TITLES

Part 1 Behaviour; 1.Advances in understanding the genetics of poultry behaviour; 2.Understanding the sensory perception of chickens; 3.Understanding states of suffering with implications for improved management of poultry; 4.Understanding chicken learning and cognition and implications for improved management; 5.Understanding poultry social behaviour and its impact on animal welfare; 6.Poultry welfare monitoring: wearable technologies; 7.Poultry welfare monitoring: group-level technologies; 8.Improving welfare assessment indicators and protocols for poultry; Part 2 Welfare issues in breeding, management and housing; 9.Welfare issues affecting broiler breeders; 10.Opportunities to improve the welfare of young chickens; 11.Welfare issues in poultry housing and management: broilers; 12.Welfare issues in poultry housing and management: laying hens; 13.The role of perches in chicken welfare; 14.Improving welfare in catching and transport of chickens; 15.Improving welfare in poultry slaughter; 16.Cause and prevention of injurious pecking in chickens; 17.Bone health and associated problems in layer hens; 18.Poultry health monitoring and management: bone and skin health in broilers

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Advances in poultry genetics and genomics

Editors: Professor Samuel E. Aggrey, Professor Huaijun Zhou, Dr Michèle Tixier-Boichard and Professor Douglas D. Rhoads

This volume addresses the key advances in genomic selection and their practical application in breeding improved breeds of layers and broilers.

Print ISBN: 978-1-78676-324-2 Pub. Date: July 2020 eBook ISBN: 978-1-78676-327-3 Pages: 580 Price: £190/\$245/€230 Series No: 79

CHAPTER TITLES

Part 1 Poultry domestication, genetics and physiology; 1. The origin and domestication of poultry species; 2. Molecular identification of major morphological mutations in poultry; 3. The genetic basis for pigmentation phenotypes in poultry; 4. Physiological challenges in poultry breeding; Part 2 Genetics and genomics of complex traits; 5. Genetics and genomics of meat quality traits in poultry species; 6. Genetics and genomics of egg production traits in poultry species; 7. Genetics and genomics of feed utilization efficiency in poultry species; 8. Genetics and genomics of behavioral and welfare traits in poultry species; 9. Genetics and genomics of feed utilization efficiency in poultry species; 8. Genetics and genomics of behavioral and welfare traits in poultry species; 9. Genetics and genomics of feed utilization efficiency in poultry species; 8. Genetics and genomics of Denomics and genomics of skeletal traits; Part 3 Use of omics in poultry breeding; 11. Theory of genome-wide association for QTL detection; 12. Genomic selection using Bayesian methods; 13. Genomic selection in poultry breeding using single-step genomic best linear unbiased prediction; 14. Application of genomic selection (GS) in breeding commercial meat-type chickens; 15. Application of genomic selection in commercial egg-type populations; 16. Landscape genomics: application in poultry breeding; 17. Breeding for small-scale poultry farming; 18. Poultry breeding for sustainability and plasticity in functional traits: reality or fiction in the midst of conflicting interests; 19. The use of nutrigenomics in poultry breeding for sustainability and plasticity in functional traits: reality or fiction in the midst of conflicting interests; 10. The use of genome editing in poultry breeding for sustainabile production; 20. The use of epigenetics in poultry breeding; 21. The use of genome editing in poultry breeding for sustainabil



Improving gut health in poultry

Editor: Professor Steven C. Ricke, University of Arkansas, USA

This collection summarises current research on the composition and function of the gastrointestinal tract in poultry, the factors that affect its function, and nutritional strategies to optimise poultry nutrition and health.

Print ISBN: 978-1-78676-304-4 Pub. Date: November 2019 eBook ISBN: 978-1-78676-307-5 Price: £180/\$235/€215 Pages: 546 Series No: 73

CHAPTER TITLES

Part 1 Understanding the gastrointestinal tract; 1.Commercial poultry production and gut function: a historical perspective; 2.Advances in sequence technologies for generating poultry gut microbiome data; 3.Omics technologies for connecting host responses with poultry gut function; 4.Understanding gut microbiota in poultry; 5.In ovo development of the chicken gut microbiome and its impact on later gut function; 6.Understanding gut function in poultry: immunometabolism at the gut level; 7.Understanding gut function in poultry: the role of commensals, metabolites, inflammation, and dysbiosis in intestinal immune function and dysfunction; **Part 2 Factors that impact the gastrointestinal tract and different types of birds**; 8.Genetics and other factors affecting intestinal microbiota and function in poultry; 9.Antibiotics and gut function: historical and current perspectives; 10.Gastrointestinal diseases of poultry: causes and nutritional strategies for prevention and control; 11.The interaction between gut microbiota and pathogens in poultry; 12.Microbial ecology and function of the gastrointestinal tract in layer hens; **Part 3 Feed additives and gut health modulation**; 13.Controlling pathogens in the poultry gut; 14.The role of probiotics in optimizing gut function in poultry; 15.Role of prebiotics in poultry; 17.Short chain organic acids: microbial ecology and antimicrobial activity in the poultry gastrointestinal tract; 18.The role of essential oils and other botanicals in optimizing gut function in poultry; 19.The role of specific cereal grain dietary components in poultry gut function.

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Achieving sustainable production of poultry meat - Volume 1 Safety, quality and sustainability

Editor: Professor Steven C. Ricke, University of Arkansas, USA

This volume discusses the main pathogens affecting poultry production, as well as how meat quality traits can be optimised to meet consumer expectations.

Print ISBN: 978-1-78676-064-7 Pub. Date: January 2017 eBook ISBN: 978-1-78676-067-8 Pag Price: £180/\$235/€215 Set

Pages: 502 Series No: 13

CHAPTER TITLES

Part 1 Poultry meat safety; 1.Zoonoses affecting poultry: the case of Campylobacter; 2.Zoonoses affecting poultry: the case of Salmonella; 3.Safety management on the poultry farm; 4.The emergence of antibiotic resistance on poultry farms; 5.Alternatives to antibiotics in preventing zoonoses and other pathogens in poultry: Prebiotics and related compounds; 6.Safety management and pathogen monitoring in poultry slaughterhouse operations: the case of the United States; 7.Inspection techniques for poultry slaughterhouse operations: the case of the United States; 7.Inspection techniques for poultry slaughterhouse operations: the case of the United States; 7.Inspection techniques for on poultry slaughterhouse operations: the case of the United States; 7.Inspection techniques for poultry slaughterhouse operations: the case of the United States; 7.Inspection techniques for on poultry slaughterhouse operations: the case of the Salmonella in Sweden; 10.Food safety control of fresh poultry meat; effective control of Salmonella in Sweden; 10.Food safety control on poultry farms: effective control of Campylobacter; **Part 2 Poultry meat quality**; 11.Poultry meat quality: an overview; 12.Enhancing the nutritional quality of poultry meat; 13.Enhancing the flavour of poultry meat; 14.The colour of poultry meat: understanding, measuring and maintaining product quality; 15.Enhancing texture and tenderness in poultry meat; 16.Preventing spoilage of poultry meat; **13 Sustainability**; 17.Life cycle assessment (LCA) of intensive poultry production systems; 18.Minimizing the environmental impact of poultry production through improved feed formulation; 19.Energy and water use in poultry processing; 20.Waste management and emissions in poultry processing; 21.Organic systems for raising poultry; 22.Helping smallholders to improve poultry production



Achieving sustainable production of poultry meat - Volume 2 Breeding and nutrition

Editor: Professor Todd Applegate, University of Georgia, USA

This book discusses the recent significant advances in poultry breeding and nutrition, focussing on key developments such as marker-assisted breeding.

Print ISBN: 978-1-78676-068-5 Pub. Date: July 2017 eBook ISBN: 978-1-78676-071-5 Price: £150/\$195/€180 Pages: 342 Series No: 14

CHAPTER TITLES

Part 1 Genetics and breeding; 1.Genes associated with functional traits in poultry: implications for sustainable genetic improvement; 2.A balanced approach to commercial poultry breeding; 3.Marker-assisted selection in poultry; Part 2 Animal nutrition; 4.The cellular basis of feed efficiency in poultry muscle: mitochondria and nucleic acid metabolism; 5.Understanding feed and water intake in poultry; 6.Advances and future directions in poultry feeding:an overview; 7.Advances in understanding and improving the role of amino acids in poultry nutrition; 8.Advances in understanding and improving the role of amino acids in poultry nutrition; 8.Advances in understanding and improving the role of enzymes in poultry nutrition; 9.Advances in understanding the role of phytate in phosphorus and calcium nutrition of poultry; 10.Probiotics, prebiotics and other feed additives to improve gut function and immunity in poultry; 11.Using models to optimise poultry nutrition; 12.Developments in feed technology to improve poultry nutrition; 13.Alternative sources of protein for poultry nutrition; 14.Maintaining the safety of poultry feed; 15.Thermal adaptation and tolerance of poultry



Achieving sustainable production of poultry meat - Volume 3 Health and welfare

Editor: Professor Todd Applegate, University of Georgia, USA

This collection reviews our understanding of bacterial, viral and other diseases affecting poultry and their effective management.

Print ISBN: 978-1-78676-072-2 Pub. Date: August 2017 eBook ISBN: 978-1-78676-075-3 Pages: 350 Price: £160/\$210/€190 Series No: 15

CHAPTER TITLES

Part 1 Animal health; 1.Monitoring trends in diseases of poultry; 2.Gut health and susceptibility to enteric bacterial diseases in poultry; 3.Viruses affecting poultry; 4.Parasites affecting poultry; 5.Disease management of poultry flocks; 6.Understanding and boosting poultry immune systems; 7.Competitive exclusion (CE) treatment to control pathogens in poultry; 8.Leg disorders in poultry: bacterial chondronecrosis with osteomyelitis (BCO); Part 2 Animal welfare; 9.Understanding poultry behaviour; 10.Ensuring the welfare of broilers: an overview; 11.Broiler breeding flocks: management and animal welfare; 12.The effect on incubation temperature on embryonic development in poultry; 13.The contribution of environmental enrichment to sustainable poultry production; 14.Hot weather management of poultry; 15.Transportation and the welfare of poultry; 16.Developments in humane slaughtering techniques for poultry



Achieving sustainable production of eggs - Volume 1 Safety and quality

Editor: Professor Julie Roberts, University of New England, Australia

This first volume considers recent developments in understanding egg composition and chemistry, as well as the key pathogens in eggs.

Print ISBN: 978-1-78676-076-0 Pub. Date: March 2017 eBook ISBN: 978-1-78676-079-1 Price: £170/\$220/€205 Pages: 430 Series No: 16

CHAPTER TITLES

Part 1 Egg composition and chemistry; 1.Composition and properties of eggshell; 2.Composition and properties of egg white; 3.The nutritional and physiological functions of egg yolk components; Part 2 Safety; 4.Pathogens affecting table eggs; 5.Mechanisms for transmissions of pathogens into eggs; 6.Sampling and detection of Salmonella in eggs; 7.Understanding the natural antibacterial defences of egg white and their regulation; 8.The effects of laying hen housing systems on egg safety and quality; 9.Egg washing to ensure product safety; 10. New developments in packaging of eggs to improve safety and quality; Part 3 Sensory and nutritional quality; 11.Egg quality: consumer preferences and measurement techniques; 12.Determinants of egg appearance and colour; 13. Understanding and improving the shelf-life of eggs; 14.The nutritional role of eggs; 15.Nutraceutical benefits of eggs; 16.Enhancing the nutritional profile of eggs; 17.Molecular breeding techniques to improve egg quality

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Achieving sustainable production of eggs - Volume 2 Animal welfare and sustainability

Editor: Professor Julie Roberts, University of New England, Australia

This second volume reviews nutrition and other aspects of husbandry affecting laying hens, as well as how egg production can be made more sustainable.

Print ISBN: 978-1-78676-080-7 Pub. Date: February 2017 eBook ISBN: 978-1-78676-083-8 Pages: 234 Price: £130/\$170/€155 Series No: 17

CHAPTER TITLES

Part 1 Animal health and welfare; 1.Laying hen nutrition: optimizing energy intake, egg size and weight; 2.Laying hen nutrition: optimizing hen performance and health, bone and eggshell quality; 3.Welfare of laying hens: an overview; 4.Welfare standards for laying hens; 5.Welfare issues affecting free-range laying hens; 6.Beak trimming of laying hens; 7.Maintaining the health of laying hens: a practical approach; 8.Managing laying hen flocks with intact beaks; Part 2 Sustainability; 9.Waste management in egg production; 10.Assessing the sustainability of organic egg production

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