

**Encyclopaedia of  
Broiler Breeder Production**  
Production, Feeding and Management Techniques

Properly managing the sexual maturation of the modern broiler breeder female is critical to obtaining a high peak and large overall number of quality hatching eggs. The most critical management period for broiler breeders is from photo stimulation (lighting) to peak production. Management deficiencies during this period are always cost-effective and often cannot be compensated for at a later stage. Broiler breeders require nutrients for maintenance, growth and egg production. Maintenance needs are met first and until that happens, growth and egg production is virtually declined. Adjusting the feed allotment throughout the lay cycle controls bird nutrient intake. Intake must be strictly controlled to prevent hens from becoming overweight resulting in decreased egg production. Flocks must be uniform in weight and body condition in order to properly allocate feed allotments. Uniformity is especially critical at the time of lighting. Flocks that vary excessively in uniformity are nearly impossible due to proper management from a feed allotment standpoint. This encyclopaedia is carefully edited and designed in as a such way that the presentation of the subject is clearly understandable.

**About the Editor**

Michael Youn has over 12 year of industry experience in Feed Manufacturing and Quality Assurance. He has developed and implemented Quality Assurance Programs and conducted audits at feed mills in the United States and Mexico. His area of specialization is broiler breeder reproductive physiology and nutrition. He has published more than 280 research, review and popular articles, two books on poultry production and a number of pamphlets on poultry science.

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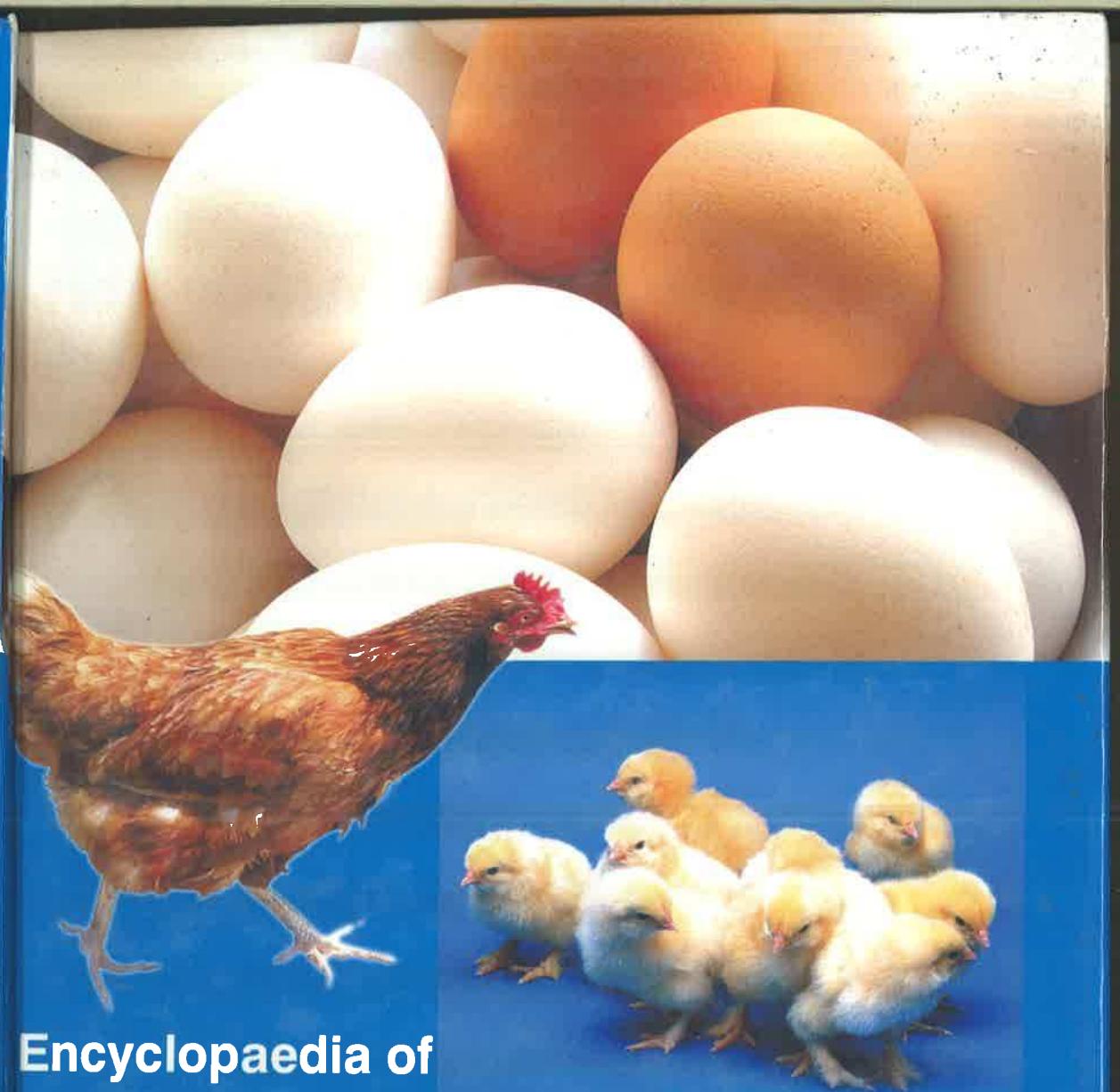
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Michael Youn

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VOLUME 3: POULTRY FARMING AND FEED FORMULATIONS

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Michael Youn  
*Editor*

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## Contents

### Preface

vii

### 1. Poultry Ventilation: Breeder House Ventilation Principles

Mechanisms Regulating Feed Intake, Energy Expenditure, and Body Weight in Poultry • Understanding and Controlling Ascites • Red Hocks in Day Old Chicks or Poulets • Improving Cardiopulmonary Performance in Broilers Chickens through Nutrition • Poultry Litter Sampling • Importance of Proper Blackout Housing • Ingredient Nutrient Uplift by Enzyme Supplementation • Effectiveness of Interventions for Reducing *Salmonella* Colonisation • In-Ovo Feeding and the Promise of Perinatal Nutrition

1

### 2. Disease of Poultry

Bacterial Diseases • Paratyphoid Infections • Fowl Cholera • *Riemerella* Anatipestifer Infections • *Mycoplasma* • Necrotic Enteritis • Gangrenous Dermatitis • Botulism • Avian Tuberculosis • Viral Inclusion Body Hepatitis • Haemorrhagic Enteritis of Turkeys • Viral Diseases • Infectious Bursal Disease (Gumboro) • Infectious Bronchitis (IB) • Laryngotracheitis • Swollen Head Syndrome • Infectious Encephalomyelitis • Newcastle Disease • Fowl Pox • Reovirus Infections • Neoplastic Diseases in Poultry • Lymphoid Leukosis • From the Point of View of Differential Diagnosis, the Following Features Deserve a Special Emphasis • Parasitic Diseases • Mycoses and Mycotoxicoses • Deficiency Diseases • Pulmonary Hypertension (Ascitis) Syndrome in Broiler Chickens • Deep Pectoral Myopathy • Gizzard Impaction in Turkey Poulets • Amyloidosis

36

### 3. Anatipestifer Disease, New Duck Syndrome, Duck Septicaemia

Anatipestifer Disease • Arizona Infection, Arizonosis • Ascites • Aspergillosis • Avian Encephalomyelitis Egg Drop • Avian Influenza-Highly Pathogenic (HPAI), Fowl Plague • Avian Leukosis (Serotype J), Myelocytomatosis • Avian Leukosis, Lymphoid Leukosis, Leukosis/Sarkoma Group • Avian Rhinotracheitis 'Swollen Head Syndrome' • Beak Necrosis • Bedbug Infestation • Big Liver and Spleen Disease • Biotin Deficiency, Including Fatty Liver and Kidney Syndrome • Biting Lice • Blackfly Infestation • Botulism • Calcium Tetany • Capillariasis — Hairworm Infection • Breast Blister • Caecal Worm

90

<b>4. Effect of Dietary Protein Concentrates</b>	<b>112</b>
Campylobacter Infection • Candidiasis, Moniliasis, Thrush • Cannibalism, Feather Pecking • Cellulitis • Chicken Anaemia • Chlamydiosis, Psittacosis, Ornithosis • Chondrodystrophy, Slipped Tendon or Perosis • Coccidiosis of Turkeys • Coccidiosis, Caecal, E tenella • Coccidiosis, E mitis • Coccidiosis, E praecox • Coccidiosis, Ileorectal, E brunetti • Coccidiosis, Intestinal, of Ducks and Geese • Coccidiosis, Kidney • Coccidiosis, Mid-intestinal, E maxima • Coccidiosis, Mid-intestinal, E necatrix • Coccidiosis, Upper Intestinal, E acervulina • Colibacillosis, Colisepticemia • Contact Dermatitis, Hock Burn, Pododermatitis • Cropworms • Cryptosporidiosis • Dactylariosis • Degenerative Joint Disease • Depluming and Scaly Leg Mites • Dissecting Aneurysm, Aortic Rupture • Duck Viral Hepatitis • Duck Virus Enteritis, Duck Plague • Dysbacteriosis, Non-Specific Bacterial Enteritis • Egg Drop Syndrome, 1976 • Endocarditis • Epiphysiolysis • Equine Encephalitis (EEE, WEE, VEE) • Erysipelas • Fatty Liver Haemorrhagic Syndrome • Favus • Femoral Head Necrosis - FHN • Fowl Cholera, Pasteurellosis • Fowl Pox, Pox, Avian Pox • Gangrenous Dermatitis, Necrotic Dermatitis • Gape • Gizzard worms - Chickens • Gizzard Worms - Geese • Goose Parvovirus (Derzsy's Disease) • Haemorrhagic Disease, Aplastic Anaemia, Haemorrhagic Anaemia • Haemorrhagic Enteritis • Heat Stress • Hexamitiasis • Histomonosis, Histomoniasis, Blackhead • Hydropericardium-Hepatitis Syndrome, Angara Disease • Impaction and Foreign Bodies of Gizzard • Inclusion Body Hepatitis • Infectious Bronchitis	
<b>5. Pre-Breeder Diets</b>	<b>175</b>
Introduction • The Pre-Breeder Period • Body Composition • Egg Weight and Hatchability • Time to Feed Your Breeders • Challenge Feeding • Spray Sanitizing Hatching Eggs • Contamination of Hatching Eggs • Profiling Egg Storage: The Effects on Egg Weight Loss and Hatchability • The Importance of Traying Eggs with the Large End Up • Specific Gravity Determination for Hatching Eggs • Vitamin Levels in Breeder Diets • Lysine Requirements of Pre- lay Broiler Breeder Pullets: Determination by Indicator Amino Acid Oxidation <sup>1,2</sup> • The Chicken Tractor	
<b>6. Poultry Breeds: A Brief History of the Origin of the Chicken</b>	<b>204</b>
Poultry Breeds	
<i>Bibliography</i>	<b>265</b>
<i>Index</i>	<b>269</b>

## Preface

While most breeding companies provide nutrient specifications for pre-breeder diets, there is considerable variation in their commercial use and application. Using a pre-breeder or pre-lay diet is based on the assumption that the birds nutrient requirements change in this critical period of the birds life. There are certainly major changes occurring in the birds metabolism, hopefully related to ovary and oviduct development, and so this is the basis for a specialised diet at this time. With egg-laying stock, pre-lay diets most often involve a change in calcium nutrition, in order to establish the birds calcium reserves necessary for rapid and sudden onset of eggshell production. The same situation can be applied to heavy breeders today, because with flocks of uniform body weight and with good light management, the subsequent synchronisation of maturity leads to rapid increase in egg numbers up to peak production. However, most often pre-breeder diets are used in an attempt to "condition" or correct growth and/or body compositional problems that have arisen during the 14-18 week growing period. In these situations managers are perhaps ill-informed of the expectations of merely changing diet specifications at this time.

Necrotic enteritis (NE) is a widespread and economically important bacterial disease in modern broiler flocks. The subclinical form of the disease is more common than clinical outbreaks in broiler flocks. The condition is not usually detected due to the absence of clear clinical signs; therefore, it is not treated and prevails unnoticed apart from a poor growth performance, wet litter conditions, and the possible contamination of poultry products for human consumption. The financial cost of NE has been estimated to be US \$2.6 billion per year to the world's poultry industry.

In subclinical NE, the major pathological changes occur in the small intestine and the liver. Intestinal *Clostridium perfringens* counts and intestinal *C. perfringens*  $\alpha$ -toxin levels are also increased. The causative organism, *C. perfringens*, is ubiquitous and found in soil, dust, feces, feed, used poultry litter, the intestines of most healthy

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## Index

### A

Acute Selenium Intoxication, 86.

Adenocarcinomatosis, 70.

Adult Breeders, 181.

Amino Acid, 10, 12, 29, 113, 114, 118, 122, 125, 196, 197, 200.

Amyloidosis, 82, 88.

Anatipestifer Disease, 90.

Antibiotics, 44, 51, 52, 53, 75, 89, 92, 98, 108, 114, 127, 164, 174.

Arizona Infection, 91.

Ascaridiosis, 73.

Aspergillosis, 74, 93, 129.

Athletic Breed, 260.

Australorp, 213, 214, 241.

Avian Influenza, 63, 96, 102, 239.

Avian Influenza-Highly Pathogenic, 96.

Avian Leukosis, 98, 100.

Avian Tuberculosis, 53.

### B

Bacterial Diseases, 36.

Barnevelder, 214.

Biotin Deficiency, 105.

Biting Lice, 105.

Blackfly Infestation, 106.

Body Composition, 178.

Botulism, 107, 108.

Brahma Chickens, 223, 224.

Breast Blister, 110.

Breeder House Ventilation, 1.

Breeding, 2, 41, 50, 67, 80, 146, 149, 163, 164, 168, 172, 175, 202, 204, 208, 210, 230, 238, 242, 246, 248.

Broiler, 4, 9, 10, 12, 13, 17, 19, 25, 31, 33, 43, 46, 48, 51, 55, 57, 60, 62, 63, 78, 79, 87, 90, 95, 96, 106, 112, 114, 115, 116, 122, 126, 127, 131, 146, 153, 154, 157, 172, 186, 189, 193, 195, 196, 199, 200, 201, 229, 230, 238.

Broiler Breeder, 3, 4, 18, 62, 65, 72, 82, 83, 178, 188, 196, 199, 200, 201.

Broiler Production, 31, 238.

### C

Caecal Worm, 110.

Calcium Metabolism, 176.

Calcium Metabolism, 176.

Calcium Tetany, 108.

Campine, 224, 225.

Catalana Chickens, 225.

Caudial Renal Artery, 87.

Cellulitis, 37, 128, 142, 159.

Chantecler Chickens, 226.

Chick Quality, 189, 193.

Chicken, 33, 34, 43, 55, 61, 86, 108, 112, 113, 114, 116, 117, 147, 160, 163, 199, 201, 204, 210, 212, 213, 214, 215, 217, 219, 221, 223, 224, 232, 235, 236,

237, 238, 240, 241, 242, 244, 245, 247, 248, 249, 250, 251, 259, 260, 262, 263.  
 Chlamydiosis, 130.  
 Chondrodystrophy, 105, 132.  
 Coccidiosis, 47, 50, 71, 72, 73, 91, 115, 120, 121, 123, 134, 135, 136, 137, 138, 139, 140, 149, 150, 151, 165.  
 Cochin Chickens, 227.  
 Contact Dermatitis, 143.  
 Cornish Chickens, 229, 230.  
 Crevecoeur Chickens, 230.  
 Cropworms, 144.  
 Cryptosporidiosis, 144.

**D**

Dactylariosis, 145.  
 debeaking, 45, 102.  
 Deep Pectoral Myopathy, 82.  
 deep pectoral myopathy, 82.  
 Deficiency Diseases, 78.  
 Diagnosis, 68, 73, 89, 91, 92, 93, 94, 95, 98, 99, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 125, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 170, 171, 172, 174.  
 Diets, 10, 14, 25, 27, 28, 29, 30, 82, 105, 113, 114, 115, 118, 119, 120, 122, 123, 124, 125, 175, 176, 177, 178, 179, 180, 196, 197, 198, 201.  
 Duck Plague, 149.

Duck Viral Hepatitis, 91, 148.  
 Dysbacteriosis, 150.

**E**

Egg Drop Syndrome, 56, 151.  
 Energy Expenditure, 3, 4.  
 English Breed, 261.  
 Enzyme Supplementation, 24.  
 Epiphysiolysis, 154.  
 Equine Encephalitis, 154.  
 Erysipelas, 155.  
 Erythroblastosis, 70, 100.  
 Escherichia Coli Infections, 36.

**F**

Farming, 16.  
 Fatty Liver, 79, 105, 153, 156.  
 Feeding Programmes, 178.  
 Femoral Head Necrosis, 157.  
 Fertility, 130, 181, 188, 202.  
 Fowl Cholera, 38, 43, 46, 56, 63, 91, 98.  
 Fowl Plague, 96.  
 Fowl Pox, 63, 153, 159.  
 Fumigation, 39, 75, 92, 185, 187.

**G**

Galium Aparine, 85, 86.  
 Gangrenous Dermatitis, 51, 160.  
 Gizzard Worms, 163.  
 Goose Parvovirus, 163.

**H**

Haemorrhagic Disease, 164.  
 Hatching, 4, 34, 36, 37, 39, 41, 55, 57, 68, 75, 92, 143, 184, 185, 186, 187, 188, 190, 203, 213, 239.  
 Hatching Eggs, 4, 92, 143, 184, 185, 186, 187, 190, 239.  
 Hen, 5, 23, 34, 37, 69, 109, 184, 190, 193, 199, 200, 202, 203, 243.  
 Histomonosis, 50, 72, 134, 167.  
 Hydropericardium, 169.  
 Hyperandrogenism, 85.

**I**

Infectious Bronchitis, 59, 95, 102, 141, 153, 173.  
 Infectious Bursal Disease, 57, 141, 157, 161, 169, 172.  
 Infestation, 103, 106.  
 Ingredient Nutrient Uplift, 24.

**K**

Kidney Syndrome, 105.  
 Knemidokoptosis, 74.  
 Kraillietinosis, 74.

**L**

Lesion Scoring, 115.  
 Lymphoid Leukosis, 67, 68, 99, 100.

**M**

Minerals, 78, 114, 194.  
 Molting, 258.  
 Mycoplasma, 46, 47, 61, 82, 156, 173.  
 Myelocytomatosis, 68, 98.

**N**

Necrotic Enteritis, 49, 133, 138, 139, 140.  
 Neoplastic Diseases, 65.  
 Newcastle Disease, 62, 95, 98, 102, 149, 153, 173, 174.  
 Nutrition, 30, 34, 35, 98, 158, 175, 176, 179, 193.

**O**

Ornamental Bird, 225, 230, 258.  
 Overfeeding, 182.

**P**

Parasitic Diseases, 71.  
 Paratyphoid Infections, 41.  
 Perinatal Nutrition, 33.  
 Phoenix Chickens, 258, 259.  
 Photostimulation, 178, 199.

Polish Chickens, 256, 257.  
 Poultry, 3, 4, 18, 19, 20, 21, 28, 30, 31, 33, 34, 35, 36, 41, 43, 44, 45, 47, 50, 64, 67, 77, 78, 80, 95, 96, 103, 105, 106, 107, 108, 109, 110, 112, 113, 115, 125, 126, 127, 128, 141, 144, 145, 147, 157, 161, 167, 169, 170, 171, 172, 190, 200, 201, 204, 205, 213, 215, 221, 222, 224, 231, 239, 240, 242, 244, 259, 262.

Poultry Breeds, 204, 205.  
 Poultry Litter Sampling, 17.  
 Poultry Ventilation, 1.

Prevention, 51, 52, 61, 62, 72, 89, 91, 92, 93, 95, 98, 99, 101, 102, 103, 105, 106, 107, 108, 109, 110, 111, 126, 127, 128, 129, 130, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 143, 144, 145, 146, 147, 148, 149, 150, 151, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 174.

Protein, 4, 24, 28, 29, 30, 34, 41, 82, 85, 93, 101, 113, 114, 118, 119, 121, 122, 124, 125, 167, 176, 179, 186, 196, 200.

Psittacosis, 130.  
 Pulmonary Hypertension, 7, 8, 9, 16, 81.

**R**

Rearing, 24, 113, 178.  
 Reovirus Infections, 64.  
 Reproduction, 21, 51, 160, 165, 193.

Rhode Island White, 259.  
Riemerella Anatipestifer, 44.

**S**

Shamo Chickens, 260.  
Spleen Disease, 103.  
Spontaneous Rupture, 87.  
Spreader Truck Litter, 20.  
Storied Bird, 221.

Stylish Breed, 262.  
Sumatra Chickens, 262, 263.  
Sussex Chickens, 261, 262.  
Swollen Head Syndrome, 60.

**T**

Treatment, 72, 89, 91, 92, 93,  
95, 98, 99, 101, 102, 103,  
104, 105, 106, 107, 108,  
109, 110, 111, 114, 126,

127, 128, 129, 130, 132,  
133, 134, 135, 136, 137,  
138, 139, 140, 141, 143,  
144, 145, 146, 147, 148,  
149, 150, 151, 153, 154,  
155, 156, 157, 158, 159,  
160, 161, 162, 163, 164,  
165, 166, 167, 169, 170,  
171, 172, 174.

**V**

Ventilation, 1, 2, 3, 6, 34, 75,  
81, 88, 92, 93, 144, 173.  
Vitamin, 13, 76, 78, 79, 80, 81,  
84, 85, 109, 114, 156, 172,  
193, 194, 195, 196.

**W**

Welsummer Chickens, 264.

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