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.

et of 3 Vols.)

ANMOL PUBLICATIONS PVT. LTD.

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ISBN 978-81-261-5074-8

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Michael Youn

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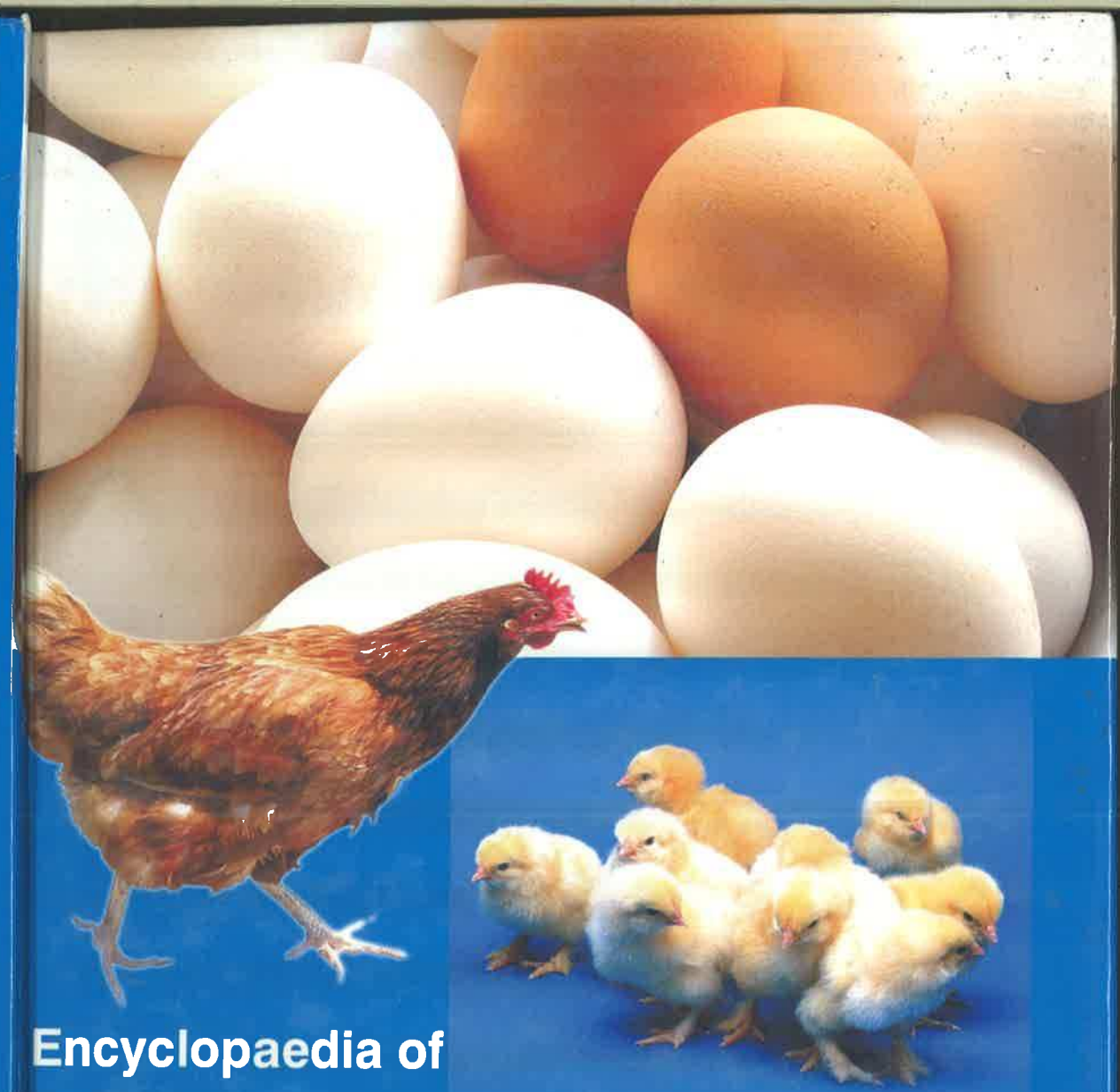

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VOLUME 3: POULTRY FARMING AND FEED FORMULATIONS

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NEW DELHI-110 002 (INDIA)

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Volume 3: Poultry Farming and Feed Formulations

© 2013

ISBN: 978-81-261-5074-8 (Set)

Editor: Michael Youn

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In arrangement with Koros Press Limited, UK

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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* α-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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