

History of artificial insemination in poultry, its components and significance

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Artificial insemination (AI) technology use in poultry production has enabled the rapid dissemination of genetic material from a small number of superior males to a high number of females. Excellent fertility in poultry can be obtained by AI compared to natural mating. Successful application of this technique needs good quality semen that should be inseminated very close to the sperm storage tubules in the female to obtain the optimum fertility in chicken. Since the 1950s, AI has been used in commercial poultry production, initially in Israel and Australia, followed by the USA. Doses of spermatozoa required for AI increases with storage time or that obtained from aged bird. The average volume of semen is between 0.05–0.50 ml in light chicken breeds and 0.1–0.9 ml in heavy males. In light turkeys, volume is 0.08–0.30 ml, whereas in heavy-weight males it is 0.1–0.33 ml. Quality evaluation of semen gives an indication of the male reproductive potential and is the major determinant of fertility and subsequently hatchability of eggs. Semen from cockerels contains between 3–7 billion sperm cells/ml. Among the several factors that influence the semen quality, sperm motility is a primary determinant of fertility in domestic fowls; however, visual examination of semen cannot be ignored for successful AI under field conditions. Dilution of low and viscous volume of avian semen is essential for handling and storage, and chicken semen typically requires a two to three-fold dilution. Collected samples should be preserved at 2–8°C for avian species, ideally with turkey sperm stored at 4–8°C, and chicken semen at 7–8°C for good fertility. Currently, the technique of AI in most of the poultry species is well developed; however, there is a need for successful development programme of this technique in non-domesticated birds to assist in creating viable, self-sustaining populations of critically endangered species.

Keywords: artificial insemination; semen collection; semen storage; semen quality; fertility

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Proceedings, First International Symposium on the Artificial Insemination of Poultry Murray R. Bakst, Graham J. Wishart, 1995

Poultry Genetics, Breeding and Biotechnology W.M. Muir, S.E. Aggrey, 2003 Annotation In this comprehensive research book issues associated with poultry breeding are addressed by examining quantitative and molecular genetics and the uses of transgenic technology The important area of disease resistance and transmission is also covered in a special section looking at the genetics of disease resistance This book represents the first complete integration of our current knowledge of biotechnology and quantitative and molecular genetics as applied to poultry breeding

Reproductive Biology and Phylogeny of Birds, Part A Barrie G M Jamieson, 2011-10-14 Aspects of reproduction covered in this volume include classification and phylogeny as revealed by molecular biology anatomy of the male reproductive tract and organs anatomy and evolution of copulatory structures development and anatomy of the female reproductive tract endocrinology of reproduction ovarian dynamics and follicle development s

Biology of Breeding Poultry Paul M. Hocking, 2009 This book reviews the biological science and background to breeding meat poultry specifically broiler turkey and duck These commercial birds have been changed by genetic selection to such an extent that they are substantially different from traditional breeds and laying hens Covering science management and husbandry systems this book is an essential reference for researchers and students in animal science as well as technical staff of breeding companies and poultry meat producers Part of the Poultry Science Symposium Series

Broiler Breeder Production S. Leeson, J. D. Summers, 2010-04-01 A comprehensive review of all aspects of commercial production systems this book provides an up to date look at all aspects of broiler breeder production and management starting with specialized genetic programs as developed by the primary breeders and ending with two chapters on very practical hands on aspects of breeder management including extensive coverage of health management feeding systems environmental control lighting programs and all aspects of male and female reproduction Recognizing the diversity of management systems worldwide the authors have included breeders in both temperate and warm climates and also for controlled environment vs curtain sided housing systems This unique publication is an essential reference for all professionals involved in broiler breeder production

Success in Artificial Insemination Alemayehu Lemma, 2013-01-09 Artificial insemination has long been the primary tool towards genetic improvement in many domestic animals Knowledge based decision are increasingly becoming important in this industry Scientific publications are having greater role in the contribution of research outputs towards an efficient utilization reproductive phenomenon This book on improving the success of AI through improving the quality of semen and related diagnostics is just one for interested readers

Poultry Behaviour and Welfare Michael C. Appleby, Joy A. Mench, Barry O. Hughes, 2004 This authoritative textbook provides an introduction and guide to poultry behavior and welfare It describes the origin and biology of the various species of bird that are of agricultural importance as well as giving a succinct overview

of their key behavior patterns There is careful discussion of the many factors that influence their welfare and detailed consideration of the ways in which legislation and commercial interests interact in an attempt to satisfy the many needs involved The final chapters discuss possible future developments within the subject The book is in part an update of a previous work Poultry Production Systems Behaviour Management and Welfare CABI 1992 completely rewritten and with much new material added

Reproduction in Farm Animals E. S. E. Hafez, B. Hafez, 2013-07-03 When you're looking for a comprehensive and reliable text on large animal reproduction look no further the seventh edition of this classic text is geared for the undergraduate student in Agricultural Sciences and Veterinary Medicine In response to reader feedback Dr Hafez has streamlined and edited the entire text to remove all repetitious and nonessential material That means you'll learn more in fewer pages Plus the seventh edition is filled with features that help you grasp the concepts of reproduction in farm animals so you'll perform better on exams and in practice condensed and simplified tables so they're easier to consult an easy-to-scan glossary at the end of the book an expanded appendix which includes graphic illustrations of assisted reproduction technology Plus you'll find valuable NEW COVERAGE on all these topics Equine Reproduction expanded information reflecting today's knowledge Llamas NEW CHAPTER Micromanipulation of Gametes and In Vitro Fertilization NEW CHAPTER Reach for the text that's revised with the undergraduate in mind the seventh edition of Hafez's Reproduction in Farm Animals

Cryobanking the Genetic Resource Paul Watson, William V. Holt, 2001-02-16 There is a growing awareness of a worldwide reduction in biodiversity and the urgent need to develop ways to redress the problem This is the first major book devoted to the subject of genetic resource banking GRB and its role in preserving global animal biodiversity In Cryobanking the Genetic Resource expert contributors provide the non-specialist with an overview of the subject and the practical techniques associated with GRB The book presents a basic introduction to the concepts and then points the way to relevant literature for those who wish to develop practical applications The first section deals with the potential contribution of GRB to biodiversity protection while the second section offers an introduction to the basic cryobiology of gametes and embryos In the first section genetic considerations for planning interventions are discussed together with disease control measures This section explores related reproductive technologies necessary for the use of cryopreserved gametes and embryos as well as a range of other issues such as ownership and security of stored material and the size and location of cryopreserved material The second section offers a thorough review of the literature on cryopreservation of spermatozoa oocytes and embryos It gathers species into related groups for ease of reference and does not assume extensive specialist knowledge so that newcomers to the field can make the best use of the available research This book is an essential resource for zoologists and conservationists with an interest in genetic management and captive breeding and also for students involved in biodiversity issues conservation and assisted reproduction

Critical Animal Studies John Sorenson, 2014-04-21 Engaging and passionate this contemporary work provokes new ways of thinking about animal human

interaction A cutting edge volume of original essays Critical Animal Studies examines our exploitation and commodification of non human animals By inquiring into the contradictions that have shaped our understanding of animals the contributors of this collection have set out to question the systemic oppression inherent in our treatment of animals The collection closes with a thoughtful consideration of some of the complexities of activism as well as a discussion of how to further the progress of animal rights Analyzing economic ethical historical and sociological aspects of human animal relations this interdisciplinary volume is a must read for all upper level students in animal studies critical animal studies animals and society and anthrozoology courses Features draws together contributions from some of the most active and committed individuals advancing the field of critical animal studies takes a revolutionary approach to mainstream animal studies by advocating for justice from a politically progressive abolitionist perspective supports curricular objectives of animal studies courses by encouraging students to critically analyze the shifting roles of animals in contemporary Western society and their consequences

Prisoned Chickens, Poisoned Eggs Karen Davis,2014-01-21 Karen Davis wrote Prisoned Chickens Poisoned Eggs in the mid 1990s to focus attention on the billions of chickens buried alive on factory farms The book was a catalyst for animal rights activists seeking to develop effective strategies to expose and relieve the plight of chickens United Poultry Concerns campaign in the 1990s to reveal the U S egg industry s cruel practice of starving hens to force them to molt their feathers and cut the cost of egg production was decisive in shifting advocacy attention to chickens and the hidden causes of Salmonella and Campylobacter food poisoning This new edition documents what has happened since the book first appeared the waging of high profile campaigns to get rid of battery cages for laying hens undercover investigations exposing the appalling cruelty to chickens and turkeys by poultry industry workers globalization of chicken production and its effect on the environment and spread of avian influenza and how farm animal sanctuaries have become key players in debunking industry myths with truthful accounts of the sensitive and intelligent birds being brutalized in the name of food It also effectively explains why these birds are so ill why eating them makes people sick and what can be done to cure the pathology of the modern poultry industry Poultry Science ,1996 Vol 5 includes a separately paged special issue dated June 1926

Proceedings of the Annual Meeting Society for Theriogenology,1997 New Hampshire Breeder and Broiler Grower ,1999 The magazine of broiler production processing marketing **Techniques for Semen Evaluation, Semen Storage, and Fertility Determination** Murray R. Bakst,Helene C. Cecil,1997 *Commercial Chicken Meat and Egg Production* Donald D. Bell,William D. Weaver,2012-12-06 Commercial Chicken Meat and Egg Production is the 5th edition of a highly successful book first authored by Dr Mack O North in 1972 updated in 1978 and 1984 The 4th edition was co authored with Donald D Bell in 1990 The book has achieved international success as a reference for students and commercial poultry and egg producers in every major poultry producing country in the world The 5th edition is essential reading for students preparing to enter the poultry industry for owners and managers of existing poultry companies and for scientists who need a

major source of scientifically based material on poultry management In earlier editions the authors emphasized the chicken and its management The 5th edition with the emphasis shifted to the commercial business of managing poultry contains over 75% new material The contributions of 14 new authors make this new edition the most comprehensive such book available Since extensive references are made to the international aspects of poultry management all data are presented in both the Imperial and Metric form Over 300 tables and 250 photos and figures support 62 chapters of text New areas include processing of poultry and eggs with thorough discussions of food safety and further processing The business of maintaining poultry is discussed in chapters on economics model production firms the use of computers and record keeping Updated topics include breeders and hatchery operations broiler and layer flock management replacement programs and management of replacements nutrition and flock health New chapters address flock behavior ventilation waste management egg quality and egg breakage Other new features include a list of more than 400 references and a Master List of the tables figures manufacturers of equipment and supplies research institutions books and periodicals breeders and trade associations Commercial growers will find the tables of data of particular interest scientists will be able to utilize the extensive references and to relate their areas of interest to the commercial industry s applications and students will find that the division of the book into 11 distinct sections with multiple chapters in each will make the text especially useful Proceedings, First International Conference on Deep Freezing of Boar Semen, August 25 to 27, 1985, 1985

Current and Future Reproductive Technologies and World Food Production G. Cliff Lamb, Nicolas DiLorenzo, 2013-10-29 This book addresses the impacts of current and future reproductive technologies on our world food production and provides a significant contribution to the importance of research in the area of reproductive physiology that has never been compiled before It would provide a unique opportunity to separate the impacts of how reproductive technologies have affected different species and their contributions to food production Lastly no publication has been compiled that demonstrates the relationship between developments in reproductive management tools and food production that may be used a reference for scientists in addressing future research areas During the past 50 years assisted reproductive technologies have been developed and refined to increase the number and quality of offspring from genetically superior farm animal livestock species Artificial insemination AI estrous synchronization and fixed time AI semen and embryo cryopreservation multiple ovulation and embryo transfer MOET in vitro fertilization sex determination of sperm or embryos and nuclear transfer are technologies that are used to enhance the production efficiency of livestock species Reproductive Technologies in Animals Giorgio Presicce, 2020-05-28 Reproductive Technologies in Animals provides the most updated and comprehensive knowledge on the various aspects and applications of reproductive technologies in production animals as well as companion wild exotic and laboratory animals and birds The text synthesizes historical information and recent discoveries while dealing with economical and geographical issues related to the implementation of the same technologies It also presents the effects of reproductive

technology implementation on animal welfare and the possible threat of pathogen transmission

Reproductive Technologies in Animals is an important resource for academics researchers professionals in public and private animal business and students at the undergraduate and graduate levels as it gives a full and detailed first hand analysis of all species subjected to the use of reproductive technologies Provides research from a team of scientists and researchers whose expertise spans all aspects of animal reproductive technologies Addresses the use of reproductive technologies in a wide range of animal species Offers a complete description and historical background for each species described Discusses successes and failure as well as future challenges in reproductive technologies

More Than a Meal Karen Davis, 2001 This scholarly and authoritative book examines the cultural and literal history as well as the natural history and biological needs and concerns of turkeys Davis explores how turkeys came to be seen as birds who were not only the epitome of failure or stupidity but also the suitable centerpiece of the celebration of freedom in America itself Thanksgiving She examines the many varieties of turkeys and uncovers the methods by which millions of turkeys are raised fattened and slaughtered on farms around America today Davis takes us back to European folklore about turkeys the myths fairytales and downright lies told about turkeys and their habits and habitats She shows how turkeys in the wild have complex lives and family units and how they were an integral part of Native American and continental cultures and landscape before the Europeans arrived Finally Davis draws conclusions about our paradoxical complex and bestial relationship not just with turkeys but with all birds and thus with all other animals She examines how our treatment of animals shapes our other values about ourselves our relationship with other human beings and our attitude toward the land nation and the world

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