Economic Aspects Of Animal Breeding

It is very essential to understand the recent advances in ruminant science to recognize and control diseases and disorders in these animals. Our book, Ruminants - The Husbandry, Economic and Health Aspects, provides a concise introductory chapter and details about the main aspects of ruminants' science and production. This is the first edition of the book, so it covers the introductory level of topics, which are written specifically for veterinary students, classroom use, and practitioners who require more knowledge of dairy animal health and production. The book covers an introductory chapter and sections on husbandry and economics as well as animal health. Each book section comprises chapters from renowned experts from the area and gives readers a unique opportunity to explore the topic.

This book is a compendium of knowledge on the useful properties of algae in the context of application as a useful component of innovative natural products. It presents all aspects of industrial applications of macroalgae biomass derived from the natural environment. Despite many interesting characteristics, algae are still regarded as undervalued raw material, therefore, present in the following chapters are not only environmental benefits arising from the development of excessive algal biomass, but also the distribution and biology of algae in natural conditions in reservoirs, methods of obtaining extracts from biomass of algae for industrial purposes. Furthermore, it also includes topics such as the use of biomass and algae extracts for the industrial purposes, in animal breeding and for agricultural purposes, as well as the economic aspects of algae biomass harvesting for industrial purposes. The book is intended for a wide audience interested in new methods of obtaining the biomass from the natural environment for industrial purposes and the manufacture of products based on bioactive substances obtained from the environment.

Air Emissions from Animal Feeding Operations: Current Knowledge, Future Needs discusses the need for the U.S. Environmental Protection Agency to implement a new method for estimating the amount of ammonia, nitrous oxide, methane, and other pollutants emitted from livestock and poultry farms, and for determining how these emissions are dispersed in the atmosphere. The committee calls for the EPA and the U.S. Department of Agriculture to establish a joint council to coordinate and oversee short - and long-term research to estimate emissions from animal feeding operations accurately and to develop mitigation strategies. Their recommendation was for the joint council to focus its efforts first on those pollutants that pose the greatest risk to the environment and public health.

This book explores the current trends and challenges of sustainable goat meat and milk production in different global contexts, providing valuable insights into this industry in adverse environments like mountain, semiarid and arid regions. It also includes contributions from international experts discussing goat reproduction, genetic diversity and improvement, as well topics such as animal health, welfare, socioeconomic aspects, and many other issues regarding the environmentally friendly and economically viable exploitation of goats. This is a highly informative book providing scientific insight for readers with an interest in sustainable agriculture and socio-economic aspects, as well as goat breed conservation, genetic diversity, and veterinary care. These subjects are complemented in a second volume providing a detailed description of more than 40 indigenous goat breeds and several ecotypes found in Asia, Africa, Europe, and America.

This important book covers economic evaluation of genetic differences in animals, determination of breeding goals within an economic context and economic evaluation of breeding programs. During the last 50 years there have been great advances made in the breeding of domesticated animal species. Most of this work has been achieved through the efforts of geneticists, and often the economic goals of such advances have not been clearly evaluated. Economic Aspects of Animal Breeding redresses the balance and provides a much needed synthesis of this most important subject. The book is divided into five sections: basic concepts; economic evaluation of genetic differences; advanced topics in selection indices; economic evaluation of breeding programs, including biotechnological aspects; crossbreeding and heterosis.

This text part offers a review of the research and developing technologies in the expanding areas of genetics, embryology, and molecular biology from experts in the various fields. It includes sections covering manipulation of the embryo, and the mapping and engineering of the genome, as well as information on nuclear transfer and the development of xenotransplantation. Possibilities for future research and development are also considered.

This anchor volume to the series Managing Global Genetic Resources examines the structure that underlies efforts to preserve genetic material, including the worldwide network of genetic collections; the role of biotechnology; and a host of issues that surround management and use. Among the topics explored are in situ versus ex situ conservation, management of very large collections of genetic material, problems of quarantine, the controversy over ownership or copyright of genetic material, and more.

This book examines the ideas and techniques of earlier generations of agricultural and sporting improvers in the seventeenth and eighteenth centuries.

A general view of animal breeding; Molecular genetics; Immunogenetics; Reproductive biology; Economic aspects of developing breeding objectives; Mixed model theory; Population size; Electronics.

Sustainable management of the world's livestock genetic diversity is of vital importance to agriculture, food production, rural development and the environment. "The State of the World's Animal Genetic Resources for Food and Agriculture" is the first global assessment of these resources. Drawing on 169 Country Reports, contributions from a number of international organizations and 12 specially commissioned thematic studies, it presents an analysis of the state of agricultural biodiversity in the livestock sector - origins and development, uses and values, distribution and exchange, risk status and threats - and of capacity to manage these resources - institutions, policies and legal frameworks, structured breeding activities and conservation programmes. Needs and challenges are assessed in the context of the forces driving change in livestock production systems. Tools and methods to enhance the use and development of animal genetic resources are explored in sections on the state of the art in characterization, genetic improvement, economic evaluation and conservation. The main findings of the report are summarized in "The State of the World's Animal Genetic Resources for Food and Agriculture - in brief," of which the Arabic, Chinese, English, French, Russian and Spanish versions can be found on the attached CD-ROM and are also available separately in printed form. As well providing a technical reference document, the country-based preparation of "The State of the World" has led to a process of policy development and a "Global Plan of Action for Animal Genetic Resources," which once adopted, will provide an agenda for action by the international community. Published also in French.

By 2050 the world's population is projected to grow by one-third, reaching between 9 and 10 billion. With globalization and expected growth in global affluence, a substantial increase in per capita meat, dairy, and fish consumption is also anticipated. The demand for calories from animal products will nearly double, highlighting the critical importance of the world's animal agriculture system. Meeting the nutritional needs of this population and its demand for animal products will require a significant investment of resources as well as policy changes that are supportive of agricultural production. Ensuring sustainable agricultural growth will be essential to addressing this global challenge to food security. Critical Role of Animal Science Research in Food Security and Sustainability identifies areas of research and development, technology, and resource needs for research in the field of animal

agriculture, both nationally and internationally. This report assesses the global demand for products of animal origin in 2050 within the framework of ensuring global food security; evaluates how climate change and natural resource constraints may impact the ability to meet future global demand for animal products in sustainable production systems; and identifies factors that may impact the ability of the United States to meet demand for animal products, including the need for trained human capital, product safety and quality, and effective communication and adoption of new knowledge, information, and technologies. The agricultural sector worldwide faces numerous daunting challenges that will require innovations, new technologies, and new ways of approaching agriculture if the food, feed, and fiber needs of the global population are to be met. The recommendations of Critical Role of Animal Science Research in Food Security and Sustainability will inform a new roadmap for animal science research to meet the challenges of sustainable animal production in the 21st century.

The use of drugs in food animal production has resulted in benefits throughout the food industry; however, their use has also raised public health safety concerns. The Use of Drugs in Food Animals provides an overview of why and how drugs are used in the major food-producing animal industries--poultry, dairy, beef, swine, and aquaculture. The volume discusses the prevalence of human pathogens in foods of animal origin. It also addresses the transfer of resistance in animal microbes to human pathogens and the resulting risk of human disease. The committee offers analysis and insight into these areas Monitoring of drug residues. The book provides a brief overview of how the FDA and USDA monitor drug residues in foods of animal origin and describes quality assurance programs initiated by the poultry, dairy, beef, and swine industries. Antibiotic resistance. The committee reports what is known about this controversial problem and its potential effect on human health. The volume also looks at how drug use may be minimized with new approaches in genetics, nutrition, and animal management. November

In order to meet increasing global demand for meat and animal by-products increasingly intensive animal production is necessary. Creating a sustainable system in animal agriculture that works in different production environments is a major challenge for animal scientists. This book draws together themes on sustainability that have emerged as the most pressing in recent years. Addressing practical topics such as air quality, manure management, animal feeds, production efficiency, environmental sustainability, biotechnology issues, animal welfare concerns, societal impacts and an analysis of the data used to assess the economic sustainability of farms.

How we produce and consume food has a bigger impact on Americans' well-being than any other human activity. The food industry is the largest sector of our economy; food touches everything from our health to the environment, climate change, economic inequality, and the federal budget. From the earliest developments of agriculture, a major goal has been to attain sufficient foods that provide the energy and the nutrients needed for a healthy, active life. Over time, food production, processing, marketing, and consumption have evolved and become highly complex. The challenges of improving the food system in the 21st century will require systemic approaches that take full account of social, economic, ecological, and evolutionary factors. Policy or business interventions involving a segment of the food system often have consequences beyond the original issue the intervention was meant to address. A Framework for Assessing Effects of the Food System develops an analytical framework for assessing effects associated with the ways in which food is grown, processed, distributed, marketed, retailed, and consumed in the United States. The framework will allow users to recognize effects across the full food system, consider all domains and dimensions of effects, account for systems dynamics and complexities, and choose appropriate methods for analysis. This report provides example applications of the framework based on complex questions that are currently under debate: consumption of a healthy and safe diet, food security, animal welfare, and preserving the environment and its resources. A Framework for Assessing Effects of the Food System describes the U.S. food system and provides a brief history of its evolution into the current system. This report identifies some of the real and potential implications of the current system in terms of its health, environmental, and socioeconomic effects along with a sense for the complexities of the system, potential metrics, and some of the data needs that are required to assess the effects. The overview of the food system and the framework described in this report will be an essential resource for decision makers, researchers, and others to examine the possible impacts of alternative policies or agricultural or food processing practices.

It is vital to understand ticks and tick-borne pathogens as well as their impact on humans. This book is intended for students in parasitology, biologists, parasitologists involved in molecular diagnostics of tick-borne diseases, practicing veterinarians, and for others who may require information on ticks and tick-borne diseases. Here we have put together a collection of chapters focused on different aspects of ticks and tick-borne diseases mainly to provide the reader with novel information in the field, but not the basic generalised information provided by many textbooks. This book includes topics such as high-throughput technologies in diagnosis, discovery of novel tick vaccines, identification of new pathogens transmitted by ticks, and new epidemiological information of certain well-known ticks and tick-borne diseases. These chapters were authored by parasitologists from all over the world, giving an insight to the reader about significant ticks and tick-borne diseases prevalent in those particular geographical regions with the local expert's point of view. Each of the chapters has separate reference lists, making it easier for the reader to find additional reading material related to their topic of interest.

The review evaluates critically the progress achieved in animal breeding practice and research over the past 2 decades for the basic species of domestic animals and poultry; identifies major factors that contributed to this progress; projects future routes for genetic improvements; identifies important areas that require particular attention and emphasis; and examines the role of the various scientific disciplines or areas of research related to animal improvement from the points of view of their past and future effects and interactions.

Aborda o melhoramento animal (bovino, ovino, caprino, suino) como importante componente de sistema de producao em areas tropicais de paises em desenvolvimento. Mostra as experiencias de pesquisa em melhoramento animal das principais especies nos tropicos, as conclusoes e faz recomendacoes adequadas.

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This research seeks to explore the economic implications of using patents to protect biotechnological innovations in animals on various stakeholders in the agri-food sector. It evaluates effects of patent protection on the domestic market in general, on Canada's strategic economic interests, and on the direction and rate of change in innovation and economic growth. The focus of the research is on five industries selected to achieve diversity in market structure, animal physiology, farm management, food versus non-food use, and visible reward systems for genetic characteristics: the poultry, dairy, hog, mink, and race horse industries. Research methods employed include a literature review, surveys, and interviews. After the introduction, section 2

reviews agri-food biotechnology performance, animal breeding, and bioveterinary products markets. Section 3 describes product markets for the five selected industries and their regulatory framework. Section 4 reviews directions in animal biotechnology research. Section 5 discusses animal-related intellectual property rights protection and the economics of patents. Section 6 examines the implications of patenting agricultural animals and section 7 discusses implications of providing or eliminating exemptions for farmers to breed patented animals. Section 8 reviews the overall potential effects of patenting farm animals. The final section draws broad conclusions and makes recommendations to enhance the potential positive impacts of patenting farm animals while diminishing negative impacts.

Genetic structure of population; Changes in gene frequency; Inbreeding; Quantitative genetics; Repeatability; Heritability; Aids to selection; Empirical tests of selection theory; Crossbreeding; Breeding plans.

New Technologies in Animal Breeding looks at new reproductive technologies in breeding domestic animals, such as sex selection, frozen storage of oocytes and embryos, in vitro fertilization and embryo culture, amphibian nuclear transplantation, parthenogenesis, identical twins and cloning in mammals, and gene transfer in mammalian cells. It summarizes the state-of-the art and offers perspectives on future directions for several animal industries of great importance in food production, including artificial insemination, embryo transfer, poultry breeding, and aquaculture. Organized into five sections encompassing 14 chapters, this book begins with an overview of animals in society and perspectives on animal breeding. It then discusses the animal industries that are heavily dependent on reproductive technology, including those engaged in cloning, selfing, aquaculture, artificial insemination, and embryo transfer. It also explains the developing technologies as well as their potential applications and impacts on animal production, along with special economic considerations, such as the benefits of reproductive management, synchronization of estrus, and artificial insemination of beef cattle and sheep. The final chapter considers biomedical and agricultural research, implementation of new technologies in animal breeding, and research in animal reproduction. This book is an essential reference for scientists and researchers interested in animal science and animal reproduction.

AAP Prose Award Finalist 2018/19 Management of Animal Care and Use Programs in Research, Education, and Testing, Second Edition is the extensively expanded revision of the popular Management of Laboratory Animal Care and Use Programs book published earlier this century. Following in the footsteps of the first edition, this revision serves as a first line management resource, providing for strong advocacy for advancing quality animal welfare and science worldwide, and continues as a valuable seminal reference for those engaged in all types of programs involving animal care and use. The new edition has more than doubled the number of chapters in the original volume to present a more comprehensive overview of the current breadth and depth of the field with applicability to an international audience. Readers are provided with the latest information and resource and reference material from authors who are noted experts in their field. The book: - Emphasizes the importance of developing a collaborative culture of care within an animal care and use program and provides information about how behavioral management through animal training can play an integral role in a veterinary health program - Provides a new section on Environment and Housing, containing chapters that focus on management considerations of housing and enrichment delineated by species - Expands coverage of regulatory oversight and compliance, assessment, and assurance issues and processes, including a greater discussion of globalization and harmonizing cultural and regulatory issues - Includes more in-depth treatment throughout the book of critical topics in program management, physical plant, animal health, and husbandry. Biomedical research using animals requires administrators and managers who are knowledgeable and highly skilled. They must adapt to the complexity of rapidly-changing technologies, balance research goals with a thorough understanding of regulatory requirements and guidelines, and know how to work with a multi-generational, multi-cultural workforce. This book is the ideal resource for these professionals. It also serves as an indispensable resource text for certification exams and credentialing boards for a multitude of professional societies Co-publishers on the second edition are: ACLAM (American College of Laboratory Animal Medicine); ECLAM (European College of Laboratory Animal Medicine); IACLAM (International Colleges of Laboratory Animal Medicine); JCLAM (Japanese College of Laboratory Animal Medicine); KCLAM (Korean College of Laboratory Animal Medicine); CALAS (Canadian Association of Laboratory Animal Medicine); LAMA (Laboratory Animal Management Association); and IAT (Institute of Animal Technology).

The nations of Subsaharan Africa experienced declining levels of food production per capita throughout the 1970s and early 1980s, particularly in the area of livestock production. Addressing that problem, the authors of this book assess in a systems context the environmental, biological, and social constraints on future African livestock development and consider prospects for improving productivity, They focus especially on changes needed in production and marketing systems, pointing to important policy considerations . The book is divided into four parts containing twenty-one chapters, each authored by one or more respective authorities in his or her field. Each section in its own way addresses the entire set of questions; topics include aspects of animal breeding and nutrition, anthropology, economics, ecology, farming systems, governmental policy, land tenure, marketing, modelling, and veterinary medicine.

Animal health and economics are closely linked. Any decision taken to prevent, control and eliminate an animal disease is based not only on the technical knowledge available about a particular disease but also on the effectiveness and socio-economic aspects associated with interventions and mitigation measures implemented by governments, producers and all the actors along the livestock value chains. Economic rationale drives decisions in assessing particular investments which are likely to result in a benefit for society or for a specific stakeholder, including livestock farmers and communities. These guidelines prepared by FAO will contribute to a better understanding of the importance of economic analysis when assessing the impact of a particular animal disease in production, trade, market access, food security and livelihoods of rural communities, or when designing or implementing an animal health strategy at national, regional or global level. This framework will provide a good communication tool between animal health technicians, veterinarians and economists in developing countries and will encourage a well informed collaboration between veterinarians, animal health experts, economists and social scientists for livestock and socio-economic development. Economic analysis should be an essential part of animal disease policies and disease management strategies.

This landmark new text charts the latest developments in economic research relevant to farm animal welfare. A range of global experts and key opinion leaders outline the challenges in achieving sustainable livestock production while improving farm profit, climate change and animal welfare, and make policy-relevant recommendations for the future. This is a theoretical yet practical book that examines: - the origins of farm animal welfare, cross-disciplinary interactions and the future of the field; - consumer demand and changing preferences as animal welfare rises up the social agenda; - the impact political organisations such as the EU and WTO have on animal welfare. An important resource for policy makers and animal welfare scientists, economists and clinicians, this book provides a thought-provoking yet evidence-based review for all those interested in quantifying and improving farm animal welfare.

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