

muscular system of cattle

muscular system of cattle plays a vital role in the overall health, productivity, and mobility of bovines. Understanding the structure, functions, and management of cattle muscles is essential for veterinarians, farmers, and livestock enthusiasts. This article delves deep into the anatomy of the muscular system in cattle, its types, how it supports movement and body functions, and the factors influencing muscle development. Readers will also discover common muscular disorders in cattle, best practices for muscle health, and the economic impact of muscle quality in the beef industry. With insights into nutrition, genetics, and welfare, this comprehensive guide is designed to provide everything you need to know about the muscular system of cattle. Continue reading to explore essential information and optimize your knowledge on this crucial topic.

- Anatomy of the Muscular System of Cattle
- Types of Muscles in Cattle
- Functions of the Muscular System
- Factors Influencing Muscle Development
- Common Muscular Disorders in Cattle
- Management and Care for Muscular Health
- Economic Importance of Muscle Quality in Cattle
- Conclusion

Anatomy of the Muscular System of Cattle

The muscular system of cattle is a complex network composed of hundreds of muscles that facilitate movement, support posture, and contribute to vital bodily functions. The system is intricately connected to the skeletal framework and is essential for locomotion, feeding, and respiration. In cattle, muscles are distributed throughout the body, with major muscle groups located in the limbs, neck, trunk, and head. These muscles vary in size, shape, and function, reflecting their adaptation to the unique needs of bovines.

Cattle muscles are primarily composed of muscle fibers, connective tissues, nerves, and blood vessels. Muscle fibers are bundled together and surrounded by connective tissue, which provides strength and flexibility. Blood vessels supply the muscles with oxygen and nutrients, while nerves control muscle contraction and coordination.

Types of Muscles in Cattle

Skeletal Muscles

Skeletal muscles are the most prominent type in the muscular system of cattle. These muscles attach to bones via tendons and are responsible for voluntary movements such as walking, running, and grazing. Skeletal muscles are striated, meaning they have a banded appearance under a microscope, and can be controlled consciously by the animal.

- **Longissimus dorsi:** Runs along the spine and is key for back movement and meat production.
- **Gluteal muscles:** Located in the hindquarters, important for leg movement and power.
- **Biceps femoris:** Found in the rear limb, aids in walking and running.
- **Trapezius:** Situated in the neck and shoulder region, allows head and neck motion.

Cardiac Muscle

The cardiac muscle forms the heart, pumping blood throughout the body. Unlike skeletal muscle, cardiac muscle works involuntarily and is highly resistant to fatigue. It has its own intrinsic rhythm, ensuring continuous circulation necessary for muscle function and overall metabolism.

Smooth Muscle

Smooth muscles are found in the walls of internal organs, such as the digestive tract, blood vessels, and reproductive system. These muscles are responsible for involuntary actions like peristalsis, which moves food through the intestines, and the regulation of blood vessel diameter. Smooth muscle activity is crucial for maintaining internal processes and homeostasis in cattle.

Functions of the Muscular System

Movement and Locomotion

The primary function of the muscular system of cattle is locomotion. Muscles work in coordination with bones and joints to enable walking, running, standing, and grazing. Proper muscle development ensures efficient movement, which is essential for accessing food and water, escaping predators, and interacting with other cattle.

Posture and Stability

Muscles support the skeleton and help maintain posture, balance, and stability. Strong muscles in the limbs, back, and neck allow cattle to stand for extended periods and adapt to various terrains. Postural muscles are also vital for reproductive activities and calving.

Vital Bodily Functions

- Respiration: Diaphragm and intercostal muscles enable breathing.
- Digestion: Smooth muscles facilitate movement of food and waste.
- Heart function: Cardiac muscle ensures consistent blood flow.

Beyond movement, the muscular system is involved in key functions like breathing, digestion, and circulation. Healthy muscles contribute to overall vitality and productivity in cattle.

Factors Influencing Muscle Development

Genetics

Genetic makeup plays a crucial role in muscle growth and composition in cattle. Breeds such as Belgian Blue and Piedmontese are known for their exceptional muscle mass due to specific genetic traits. Selection for muscle quality is a common practice in beef production to maximize yield and meat quality.

Nutrition

Adequate nutrition is vital for optimal muscle development. Protein, energy, vitamins, and minerals are essential nutrients that support muscle growth and repair. Young, growing cattle require balanced diets to develop strong, healthy muscles, while adult cattle maintain muscle mass through proper feeding regimens.

- Protein: Necessary for muscle synthesis and repair.
- Energy: Fuels muscle activity and growth.
- Minerals: Calcium, phosphorus, and magnesium support muscle contraction.
- Vitamins: Vitamin E and selenium help prevent muscle degeneration.

Exercise and Physical Activity

Regular movement and activity stimulate muscle growth and strength in cattle. Grazing, walking, and interaction within herds provide natural exercise. In managing beef and dairy cattle, producers often encourage movement to promote muscle health and overall welfare.

Health and Welfare

Disease, injury, and stress can negatively impact muscle development and function. Preventative healthcare, proper housing, and minimizing stress are essential strategies for maintaining muscular health in cattle.

Common Muscular Disorders in Cattle

White Muscle Disease

White Muscle Disease is a common muscular disorder in young cattle, caused by deficiencies in selenium and vitamin E. It leads to degeneration of muscle tissue, weakness, and impaired movement. Early detection and supplementation can prevent severe outcomes.

Muscle Atrophy

Muscle atrophy refers to the wasting or loss of muscle tissue, often resulting from disuse, malnutrition, or chronic illness. Affected cattle may show signs of weakness, poor mobility, and reduced productivity.

Trauma and Injury

Physical injuries such as strains, sprains, and contusions can damage muscle fibers and connective tissues. Trauma may occur due to accidents, improper handling, or environmental hazards, requiring prompt veterinary intervention.

Other Disorders

- **Myositis:** Inflammation of muscle tissue, often due to infection.
- **Congenital defects:** Genetic abnormalities affecting muscle structure or function.
- **Metabolic muscle diseases:** Disorders related to energy metabolism within muscles.

Management and Care for Muscular Health

Preventative Healthcare

Regular veterinary checkups, vaccination, and disease prevention programs are essential for maintaining muscular health in cattle. Early identification of problems can prevent long-term damage and ensure animal productivity.

Nutrition Management

Providing balanced rations rich in proteins, minerals, and vitamins supports muscle growth and repair. Supplements may be necessary in regions with soil or forage deficiencies.

Exercise and Housing

Adequate space and opportunities for movement are crucial for muscle development. Proper housing reduces the risk of injuries and facilitates natural behaviors that promote muscular health.

Handling and Welfare Practices

Gentle handling, minimizing stress, and providing comfortable environments contribute to muscular well-being. Stress can negatively affect muscle metabolism and growth, making animal welfare a priority in cattle management.

Economic Importance of Muscle Quality in Cattle

Meat Production and Yield

Muscle quality is a critical factor in beef production, directly impacting meat yield, tenderness, and market value. Well-developed muscles provide higher carcass weights and desirable cuts, benefiting producers economically.

Breed Selection and Genetics

Selective breeding for muscle traits enhances production efficiency and meat quality. Genetic improvement programs focus on traits such as muscle mass, marbling, and feed conversion ratio to optimize profitability.

Health and Welfare Impact on Productivity

Healthy muscles ensure efficient movement, reproductive success, and overall productivity. Muscular disorders can lead to financial losses through decreased growth rates, increased veterinary costs, and lower meat quality.

Conclusion

The muscular system of cattle is fundamental to their health, productivity, and economic value. From anatomy and muscle types to management and disease prevention, a thorough understanding of bovine muscles is essential for effective livestock care and profitable production. By prioritizing nutrition, genetics, welfare, and preventative healthcare, producers and veterinarians can ensure optimal muscular health and support the well-being of cattle herds.

Q: What are the main types of muscles found in cattle?

A: The main types are skeletal muscles, cardiac muscle, and smooth muscle. Skeletal muscles facilitate movement, cardiac muscle controls heart function, and smooth muscle manages involuntary activities in organs.

Q: How does nutrition affect muscle development in cattle?

A: Adequate nutrition, especially protein, energy, minerals, and vitamins, is crucial for muscle growth, repair, and prevention of disorders like white muscle disease.

Q: What is white muscle disease in cattle?

A: White muscle disease is a muscular disorder caused by deficiencies in selenium and vitamin E, leading to muscle degeneration, weakness, and impaired mobility.

Q: Why is muscle quality important in beef production?

A: Muscle quality impacts meat yield, tenderness, and market value, directly affecting profitability for beef producers.

Q: How can farmers promote muscular health in cattle?

A: By providing balanced nutrition, regular exercise, proper housing, preventative healthcare, and minimizing stress.

Q: What role does genetics play in cattle muscle development?

A: Genetics determines muscle growth, composition, and quality. Selective breeding enhances desirable traits for beef production.

Q: What are common signs of muscular disorders in cattle?

A: Signs include muscle weakness, poor mobility, swelling, stiffness, and reduced productivity.

Q: How do muscles contribute to cattle movement and stability?

A: Muscles work with bones and joints to enable locomotion, maintain posture, and provide balance and stability.

Q: What are some key muscles used for movement in cattle?

A: Key muscles include the longissimus dorsi, gluteal muscles, biceps femoris, and trapezius, all essential for walking, running, and head movement.

Q: Can muscle injuries in cattle be prevented?

A: Yes, through gentle handling, proper housing, regular exercise, and routine veterinary care, the risk of muscle injuries can be minimized.

Muscular System Of Cattle

Find other PDF articles:

<https://fc1.getfilecloud.com/t5-w-m-e-06/Book?dataid=HBx25-6404&title=kansas-medicaid-fee-schedule.pdf>

The Muscular System of Cattle: A Comprehensive Guide

Understanding the muscular system of cattle is crucial for anyone involved in livestock production, veterinary science, or simply appreciating the bovine anatomy. This comprehensive guide delves into the intricacies of the bovine musculature, exploring its structure, function, and significance in

various aspects of cattle management and well-being. We'll examine key muscle groups, their roles in locomotion and vital functions, and how understanding this system impacts animal health and productivity.

H2: Structure and Composition of Cattle Muscle

Cattle, like all mammals, possess a complex muscular system comprised of skeletal, smooth, and cardiac muscle tissue. The skeletal muscles, which account for the bulk of the muscular mass, are responsible for voluntary movement. These muscles are attached to bones via tendons, enabling locomotion, grazing, and other activities. They are composed of bundles of muscle fibers, each containing myofibrils responsible for muscle contraction. The arrangement of these fibers varies depending on the muscle's function, influencing its power and speed. For example, muscles involved in powerful movements, like those in the hindquarters, often have a pennate arrangement, allowing for greater force generation.

H2: Key Muscle Groups and Their Functions

Understanding the major muscle groups in cattle is essential for assessing animal health and evaluating carcass quality. Let's break down some key areas:

H3: Muscles of Locomotion

Hindquarters: The gluteal muscles (responsible for hip extension and abduction), the semitendinosus, semimembranosus, and biceps femoris (hamstring muscles involved in flexing the knee and extending the hip), and the quadriceps femoris (extending the knee) are critical for locomotion and power. Their development significantly influences the carcass value, particularly in beef cattle.

Forequarters: Muscles of the shoulder (like the supraspinatus and infraspinatus) and the triceps brachii (extending the elbow) are vital for weight bearing and movement of the forelimbs. Their condition is often an indicator of overall animal health and nutritional status.

Neck and Back: The longissimus dorsi muscle, a large muscle running along the spine, plays a key role in supporting the body and enabling movement. This is a significant muscle for meat yield and quality.

H3: Muscles of Respiration and Digestion

Beyond locomotion, cattle possess essential muscles involved in crucial bodily functions:

Diaphragm: This dome-shaped muscle separates the thoracic and abdominal cavities and is crucial for respiration. Its proper function is vital for oxygen uptake and efficient breathing.

Intercostal Muscles: Located between the ribs, these muscles aid in breathing by expanding and contracting the rib cage.

Muscles of the Digestive System: Smooth muscles within the esophagus, stomach, and intestines are responsible for peristalsis, the rhythmic contractions that move food through the digestive tract.

H2: Factors Affecting Muscle Development

Several factors influence the development and health of cattle's muscular system:

Genetics: Breed plays a significant role in muscle composition and growth potential. Some breeds are naturally predisposed to greater muscle mass and specific muscle fiber types.

Nutrition: A balanced diet rich in protein and essential nutrients is crucial for muscle growth and development. Deficiencies can lead to muscle weakness and impaired function.

Exercise and Activity: Appropriate levels of exercise, especially in young cattle, contribute to healthy muscle development.

Health and Disease: Various diseases and conditions can impact muscle health. Infections, metabolic disorders, and injuries can lead to muscle atrophy, weakness, or pain.

H2: Importance in Livestock Production and Veterinary Medicine

Understanding the bovine muscular system is crucial for several reasons:

Carcass Evaluation: Muscle mass and distribution directly impact the quality and value of beef carcasses. Careful assessment of muscle development is essential for grading and marketing.

Animal Health: Evaluating muscle condition can aid in the diagnosis of various diseases and nutritional deficiencies. Muscle soreness, atrophy, or tremors can be indicators of underlying health issues.

Animal Welfare: Maintaining muscle health is essential for animal welfare. Proper nutrition, exercise, and disease prevention are crucial for ensuring cattle remain active and healthy.

Conclusion

The muscular system of cattle is a complex and vital component of their overall physiology. Understanding its structure, function, and the factors affecting its development is critical for efficient livestock management, accurate disease diagnosis, and improving animal welfare. By appreciating the intricate workings of this system, we can enhance productivity and ensure the well-being of these important animals.

FAQs

1. What are the most common muscle diseases in cattle? Common muscle diseases include muscular dystrophy, white muscle disease (due to selenium deficiency), and various forms of myositis (muscle inflammation).
2. How does muscle composition affect meat quality? Muscle fiber type (fast-twitch vs. slow-twitch) influences meat tenderness and flavor. The proportion of fat within the muscle also impacts marbling and overall palatability.
3. Can you identify specific muscles used in chewing? The masseter and temporalis muscles are primary muscles involved in chewing.
4. What is the role of the bovine muscular system in thermoregulation? Muscle activity generates heat, contributing to thermoregulation. Shivering, for example, is a muscular response to cold.
5. How does stress affect cattle muscle? Stress can negatively impact muscle development and potentially lead to reduced meat quality through increased cortisol levels and altered muscle metabolism.

muscular system of cattle: *Designing Foods* National Research Council, Board on Agriculture, Committee on Technological Options to Improve the Nutritional Attributes of Animal Products, 1988-02-01 This lively book examines recent trends in animal product consumption and diet; reviews industry efforts, policies, and programs aimed at improving the nutritional attributes of animal products; and offers suggestions for further research. In addition, the volume reviews dietary and health recommendations from major health organizations and notes specific target levels for nutrients.

muscular system of cattle: Small Animal Pathology for Veterinary Technicians Amy Johnson, 2014-04-07 Small Animal Pathology for Veterinary Technicians fosters an understanding of small animal diseases, relating pathology information to the responsibilities of technicians in the clinical setting. Beginning with the technician's role in pathology, terminology, and the process of diagnosis, chapters then cover diseases organized by system. From reproductive, endocrine, and eye disease to urinary tract and infectious diseases, the book offers in-depth information on a wide range of commonly presented diseases, providing technicians with practical information linked to their daily tasks. Each body system includes a brief review of anatomy and function, full-color pictures, and tip boxes to help emphasize important issues. A companion website offers images from the book, review questions, and case studies illustrating the process of handling the patient at www.wiley.com/go/johnsonvettechpath. Veterinary technician students and veterinary technicians in practice will find this a valuable resource to understanding disease and the process of diagnosis.

muscular system of cattle: **Muscle Development of Livestock Animals** M. F. W. te Pas, M. E. Everts, H. P. Haagsman, 2004-01-01 Number and size of muscle fibres in relation to meat production. Fibre type identification and functional characterization in adult livestock animals. Manipulation of muscle fibre number during prenatal development. The effect of growth and exercise on muscle characteristics in relation to meat quality. Nutrition, hormone receptor expression and gene interactions: implications for development and disease. The impact of minerals and micronutrients on growth control. Na⁺ K⁺-ATPase in skeletal muscle: significance of exercise and thyroid hormones for development and performance. local and ystemic regulation of muscle growth. Proteolytic systems and the regulation of muscle remodelling and breakdown. Themuscle

regulatory factors gene family in relation to meat production. The muscle transcriptome. Genome analysis of QTL for muscle tissue development and meat quality. Functional genomics and proteomics in relation to muscle tissue. Role of myostatin in muscle growth. The callipyge mutation for sheep muscular hypertrophy genetics, physiology and meat quality. Genetic control of intramuscular fat accretion, Post-mortem muscle proteolysis and meat tenderness. Water-holding capacity of meat.

muscular system of cattle: *AMP-Activated Protein Kinase Signalling* Dietbert Neumann, Benoit Viollet, 2019-03-14 Starting from a kinase of interest, AMP-activated protein kinase (AMPK) has gone far beyond an average biomolecule. Being expressed in all mammalian cell types and probably having a counterpart in every eukaryotic cell, AMPK has attracted interest in virtually all areas of biological research. Structural and biophysical insights have greatly contributed to a molecular understanding of this kinase. From good old protein biochemistry to modern approaches, such as systems biology and advanced microscopy, all disciplines have provided important information. Thus, multiple links to cellular events and subcellular localizations have been established. Moreover, the crucial involvement of AMPK in human health and disease has been evidenced. AMPK accordingly has moved from an interesting enzyme to a pharmacological target. However, despite our extensive current knowledge about AMPK, the growing community is busier than ever. This book provides a snapshot of recent and current AMPK research with an emphasis on work providing molecular insight, including but not limited to novel physiological and pathological functions, or regulatory mechanisms. Up-to-date reviews and research articles are included.

muscular system of cattle: *Anatomy and Physiology of Farm Animals* Rowen D. Frandson, W. Lee Wilke, Anna Dee Fails, 2009-06-30 The Seventh Edition of *Anatomy and Physiology of Farm Animals* is a thoroughly updated and revised version of this classic text. Drawing on current science and terminology with a number of new illustrations throughout and a new chapter on poultry, the book maintains its reputation for clarity, balanced scope, and breadth of content. The Seventh Edition provides veterinary, animal science, agriculture, and veterinary technician students with a comprehensive yet clear reference to understanding the fundamentals of anatomy and physiology.

muscular system of cattle: *Anatomy and Physiology of Animals* J. Ruth Lawson, 2011-09-11 This book is designed to meet the needs of students studying for Veterinary Nursing and related fields.. It may also be useful for anyone interested in learning about animal anatomy and physiology.. It is intended for use by students with little previous biological knowledge. The book has been divided into 16 chapters covering fundamental concepts like organic chemistry, body organization, the cell and then the systems of the body. Within each chapter are lists of Websites that provide additional information including animations.

muscular system of cattle: *Experimental Researches on the Food of Animals, and the Fattening of Cattle* Robert Dundas Thomson, 1846

muscular system of cattle: *Special Report of Diseases of Cattle and on Cattle Feeding* D. E. Salmon, 1892

muscular system of cattle: *Molecular Biology of the Cell*, 2002

muscular system of cattle: Anatomy and Physiology of Farm Animals R. D. Frandson, T. L. Spurgeon, Thomas Leslie Spurgeon, 1992 This 5th edition offers concise information on general anatomic and physiologic principles applicable to all farm animals. All topics have been updated, supported by the latest research discoveries and factual information. Anglicized technical terms are used throughout the book, but most terms not found in an ordinary dictionary are defined within the text. Important differences from the gradually accepted view of controversial subjects are mentioned or discussed.

muscular system of cattle: Motor Function of the Pharynx, Esophagus, and Its Sphincters Ravinder Mittal, 2011 Deglutition or a swallow begins as a voluntary act in the oral cavity but proceeds autonomously in the pharynx and esophagus. Bilateral sequenced activation and inhibition of more than 25 pairs of muscles of mouth, pharynx, larynx, and esophagus is required during a swallow. A single swallow elicits peristalsis in the pharynx and esophagus along with

relaxation of upper and lower esophageal sphincters. Multiple swallows, at closely spaced time intervals, demonstrate deglutitive inhibition; sphincters remain relaxed during the entire period, but only the last swallow elicits peristalsis. Laryngeal inlet closure or airway protection is very important during swallow. Upper part of the esophagus that includes upper esophageal sphincter is composed of skeletal muscles, middle esophagus is composed of a mixture of skeletal and smooth muscles, and lower esophagus, including lower esophageal sphincter, is composed of smooth muscles. Peristalsis progresses in seamless fashion, despite separate control mechanism, from the skeletal to smooth muscle esophagus. The esophagus's circular and longitudinal muscle layers contract synchronously during peristalsis. Sphincters maintain continuous tone; neuromuscular mechanisms for tonic closure in the upper and lower esophageal sphincters are different. Lower esophageal sphincter transient relaxation, belching mechanism, regurgitation, vomiting, and reflux are mediated via the brain stem. Table of Contents: Introduction / Central Program Generator and Brain Stem / Pharynx-Anatomy, Neural Innervation, and Motor Pattern / Upper Esophageal Sphincter / Neuromuscular Anatomy of Esophagus and Lower Esophageal Sphincter / Extrinsic Innervation: Parasympathetic and Sympathetic / Interstitial Cells of Cajal / Recording Techniques / Motor Patterns of the Esophagus-Aboral and Oral Transport / Deglutitive Inhibition and Muscle Refractoriness / Peristalsis in the Circular and Longitudinal Muscles of the Esophagus / Neural and Myogenic Mechanism of Peristalsis / Central Mechanism of Peristalsis-Cortical and Brain Stem Control / Peripheral Mechanisms of Peristalsis / Central Versus Peripheral Mechanism of Deglutitive Inhibition / Neural Control of Longitudinal Muscle Contraction / Modulation of Primary and Secondary Peristalsis / Neural Control of Lower Esophageal Sphincter and Crural Diaphragm / Lower Esophageal Sphincter / Swallow-Induced LES Relaxation / Crural Diaphragm Contribution to EGJ and Neural Control / Transient LES Relaxation and Pharmacological Inhibition / Compliance of the EGJ / References

muscular system of cattle: Introduction to Animal and Veterinary Anatomy and Physiology, 4th Edition Victoria Aspinall, Melanie Cappello, 2019-12-11 A sound knowledge of anatomy and physiology is an essential basis for the effective clinical treatment of companion animals and farm animals alike. The fourth edition of this bestselling book continues to provide a comprehensive description of the anatomy and physiology of dogs and cats. The book builds on these foundations with detailed descriptions of exotic small species including birds, and domestic farm animals, including cows, sheep and pigs, as well as the horse.

muscular system of cattle: *Special Report on Diseases of Cattle and on Cattle Feeding* United States. Bureau of Animal Industry, 1896

muscular system of cattle: **Report on the Origin, Propagation, Nature, and Treatment of the Cattle Plague : from Information Received at the Veterinary Department of the Privy Council Office, from June 1965 Up to March 20th, 1966 ...** Great Britain. Veterinary Department, Alexander Williams, 1866

muscular system of cattle: **Use of Laboratory Animals in Biomedical and Behavioral Research** National Research Council, Institute of Medicine, Institute for Laboratory Animal Research, Commission on Life Sciences, Committee on the Use of Laboratory Animals in Biomedical and Behavioral Research, 1988-02-01 Scientific experiments using animals have contributed significantly to the improvement of human health. Animal experiments were crucial to the conquest of polio, for example, and they will undoubtedly be one of the keystones in AIDS research. However, some persons believe that the cost to the animals is often high. Authored by a committee of experts from various fields, this book discusses the benefits that have resulted from animal research, the scope of animal research today, the concerns of advocates of animal welfare, and the prospects for finding alternatives to animal use. The authors conclude with specific recommendations for more consistent government action.

muscular system of cattle: **Cattle** William Youatt, 1838

muscular system of cattle: **Parliamentary Papers** Great Britain. Parliament. House of Commons, 1846

muscular system of cattle: Bovine Anatomy Klaus-Dieter Budras, Robert E. Habel, 2011-09-05 Die zweite englische Auflage dieses erfolgreichen Lehrbuches ist nun auch nach dem bewährten Konzept der „Budras-Atlanten“ durch namhafte Experten aus der Anatomie und der klinischen Medizin um die klinisch-funktionelle Anatomie erweitert. „This is a much-needed textbook-atlas that depicts bovine anatomy. It is appropriately organized such that it can easily be the single book that veterinarians refer to when an anatomic question needs to be answered about this species. It is most definitely worth the price.“ JAVMA – Journal of the American Veterinary Medical Association

muscular system of cattle: Special Report on Diseases of Cattle United States. Bureau of Animal Industry, 1912

muscular system of cattle: Cattle Problems Explained J. W. Clarke (of Battle Creek, Mich.), 1880

muscular system of cattle: Bovine Pathology Claus D Buergelt, Edward G Clark, Fabio Del Piero, 2018-05-01 Illustrated with over 1000 color images of the highest quality, *Bovine Pathology: A Text and Color Atlas* is a comprehensive single resource to identifying diseases in dairy cattle, feedlot cattle, and their calves. With summary text describing key features, the book correlates clinical information with pathology and differential diagnoses. The text covers naked-eye macroscopic appearance, through to microscopic pathology, and the immunohistochemistry of infectious agents and tumor markers. Structured by major organ system, the disease entries follow a consistent format and clarity of display. Serving as an essential reference work for veterinary pathologists who perform bovine necropsies, veterinary residents and students, the book is also practical enough for bovine practitioners who need to investigate sudden death losses of cattle on the farm.

muscular system of cattle: Special Report on Diseases of Cattle Various Authors,

muscular system of cattle: Nutrient Requirements of Beef Cattle Subcommittee on Beef Cattle Nutrition, Committee on Animal Nutrition, Board on Agriculture, National Research Council, 2000-05-16 As members of the public become more conscious of the food they consume and its content, higher standards are expected in the preparation of such food. The updated seventh edition of *Nutrient Requirements of Beef Cattle* explores the impact of cattle's biological, production, and environmental diversities, as well as variations on nutrient utilization and requirements. More enhanced than previous editions, this edition expands on the descriptions of cattle and their nutritional requirements taking management and environmental conditions into consideration. The book clearly communicates the current state of beef cattle nutrient requirements and animal variation by visually presenting related data via computer-generated models. *Nutrient Requirements of Beef Cattle* expounds on the effects of beef cattle body condition on the state of compensatory growth, takes an in-depth look at the variations in cattle type, and documents the important effects of the environment and stress on food intake. This volume also uses new data on the development of a fetus during pregnancy to prescribe nutrient requirements of gestating cattle more precisely. By focusing on factors such as product quality and environmental awareness, *Nutrient Requirements of Beef Cattle* presents standards and advisements for acceptable nutrients in a complete and conventional manner that promotes a more practical understanding and application.

muscular system of cattle: Periparturient Diseases of Cattle Tanmoy Rana, 2024-12-24 Manage the health of cattle at a critical stage with this essential reference. Milk is one of the backbones of the global food economy, with its high vitamin content and key contribution to bone health. As a result, dairy farming is one of the most essential sectors of the global agricultural market, and the health of cattle is an issue of global importance. Periparturient diseases, those sustained in the period immediately before, during, and after giving birth, have a potentially devastating impact on the reproductive cycle of cattle, and an understanding of these conditions is a critical aspect of food production. *Periparturient Diseases of Cattle* offers a comprehensive overview of these diseases, their pathogenesis, and their treatments. Summarizing all of the major periparturient disorders, their etiology, and their management, it is a critical resource for veterinary

practitioners and others for whom cattle health is of fundamental importance. As a reference, a diagnostic aid, and a tool in farm management, this volume is indispensable. Periparturient Diseases of Cattle readers will also find: In-depth description of disease advancement Detailed treatment of disorders including metritis, mastitis, ketosis, and many more Color figures and line drawings to illustrate key concepts Periparturient Diseases of Cattle is ideal for student and working veterinarians, academicians, farm managers, industrialists, farm owners, and many more.

muscular system of cattle: Muscle Hypertrophy of Genetic Origin and its use to Improve Beef Production J.W. King, F. Ménéssier, 2012-12-06 This publication contains the proceedings of a seminar held in Toulouse, France, on 10th, 11th and 12th June 1980, under the auspices of the Commission of the European Communities, Directorate General for Agriculture, Division for the Coordination of Agricultural Research, as part of a programme of research on beef production. The seminar was intended to bring together available experience on the utilisation of hereditary muscular hypertrophy for meat production in the member states of the European Communities. Although the phenomenon of double muscling has been exploited in various countries, particularly France, Italy and Belgium, different breeds are used and different methods of exploitation employed. An attempt was therefore made to bring together the collective experience of participants. Contributions ranged from those on the inheritance of muscular hypertrophy to alternative production systems and from fundamental studies of muscle growth to practical ways of selling the additional muscle found in animals with muscular hypertrophy. The collection of assembled papers and discussions thus represents one of the most extensive reviews of the subject that has been attempted.

muscular system of cattle: General and Descriptive Anatomy of the Domestic Animals by John Gamgee and James Law John Gamgee, 1862

muscular system of cattle: Recognition and Alleviation of Pain and Distress in Laboratory Animals National Research Council, Commission on Life Sciences, Institute for Laboratory Animal Research, Committee on Pain and Distress in Laboratory Animals, 1992-01-01 Clear guidelines on the proper care and use of laboratory animals are being sought by researchers and members of the many committees formed to oversee animal care at universities as well as the general public. This book provides a comprehensive overview of what we know about behavior, pain, and distress in laboratory animals. The volume explores: Stressors in the laboratory and the animal behaviors they cause, including in-depth discussions of the physiology of pain and distress and the animal's ecological relationship to the laboratory as an environment. A review of euthanasia of lab animals-exploring the decision, the methods, and the emotional effects on technicians. Also included is a highly practical, extensive listing, by species, of dosages and side effects of anesthetics, analgesics, and tranquilizers.

muscular system of cattle: Estimation of the Time Since Death Burkhard Madea, 2015-09-08 Estimation of the Time Since Death remains the foremost authoritative book on scientifically calculating the estimated time of death postmortem. Building on the success of previous editions which covered the early postmortem period, this new edition also covers the later postmortem period including putrefactive changes, entomology, and postmortem r

muscular system of cattle: Annual Report of the Ontario School of Agriculture and Experimental Farm Ontario. Agricultural College and Experimental Farm, Guelph, 1881

muscular system of cattle: Annual Report of the Commissioner of Agriculture and Arts for the Province of Ontario, for the Year Ontario. Commissioner of Agriculture and Arts, 1881

muscular system of cattle: *Sessional Papers* Ontario. Legislative Assembly, 1879

muscular system of cattle: *Report of the Commissioner of Agriculture and Arts* Ontario. Department of Agriculture, 1881

muscular system of cattle: Annual Report of the Ontario School of Agriculture and Experimental Farm Ontario Agricultural College, 1881

muscular system of cattle: *Report* Ontario Agricultural College, 1881

muscular system of cattle: *Lovelock's American Standard of Excellence for Purebred*

Cattle, Sheep and Swine Frank A. Lovelock, 1893

muscular system of cattle: Anatomy and Physiology of Domestic Animals R. Michael Akers, D. Michael Denbow, 2013-09-05 Anatomy and Physiology of Domestic Animals, Second Edition offers a detailed introduction to the foundations of anatomy and physiology in a wide range of domestic species. Well illustrated throughout, the book provides in-depth information on the guiding principles of this key area of study for animal science students, fostering a thorough understanding of the complex make-up of domestic animals. This Second Edition includes access to supplementary material online, including images and tables available for download in PowerPoint, a test bank of questions for instructors, and self-study questions for students at www.wiley.com/go/akers/anatomy. Taking a logical systems-based approach, this new edition is fully updated and now provides more practical information, with descriptions of anatomic or physiological events in pets or domestic animals to demonstrate everyday applications. Offering greater depth of information than other books in this area, Anatomy and Physiology of Domestic Animals is an invaluable textbook for animal science students and professionals in this area.

muscular system of cattle: Genetic analysis of reproductive traits in livestock Aixin Liang, John S. Davis, Yang Zhou, Hasan Riaz, 2023-02-14

muscular system of cattle: Purdon's Veterinary Hand-Book. The Diseases of Horses, Cattle, Sheep, ... Their Causes, Symptoms, and Treatment; Collected and Arranged from the Best Authorities by R. O. Pringle. Second Edition Robert Oliphant Pringle, 1871

muscular system of cattle: General and Descriptive Anatomy of the Domestic Animals. Vol. 1 John GAMGEE (and LAW (James) Professor in the New Veterinary College, Edinburgh.), 1862

muscular system of cattle: Clinical Examination of Farm Animals Peter Jackson, Peter Cockcroft, 2008-04-15 Clinical examination is a fundamental part of the process of veterinary diagnosis. Without a proficient clinical examination and an accurate diagnosis it is unlikely that the treatment, control, prognosis and welfare of animals will be optimised. This book will assist veterinary students in their understanding of farm animal clinical examination and act as a quick reference for clinicians who are called upon to examine an unfamiliar species. It will also provide a more detailed account for experienced clinicians in their continuing professional development. The authors provide a simple, explicit and reliable method of examining cattle, sheep, pigs and goats of all ages in the search for diagnostic information.

Back to Home: <https://fc1.getfilecloud.com>