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Integrating Animal Nutrition into Veterinary Science: Enhancing Health, Productivity, and Sustainability through Advanced Nutritional Strategies and Collaborative Approaches

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Abstract : The science of animals and veterinary medicine is a multidisciplinary field dedicated to understanding, managing, and enhancing the health and welfare of animals. This field encompasses a broad spectrum of disciplines, including animal physiology, genetics, nutrition, behavior, and pathology, as well as preventive and therapeutic veterinary care. Veterinary science focuses on diagnosing, treating, and preventing diseases in animals, ensuring their health and well-being. It involves the study of various animal species, from companion animals and livestock to wildlife and exotic species. Through advanced diagnostic techniques, medical treatments, and surgical procedures, veterinarians address a wide range of health issues, from infectious diseases and injuries to chronic conditions and reproductive health. Animal science complements veterinary medicine by providing a deeper understanding of animal biology and behavior, which is essential for effective health management. It includes research on animal breeding, nutrition, and husbandry practices aimed at improving animal productivity and welfare. Incorporating modern technologies and methodologies, such as genomics, bioinformatics, and precision farming, the science of animals and veterinary medicine continually evolves to address emerging challenges. This integrated approach ensures the development of sustainable practices, enhances animal welfare and contributes to public health by monitoring zoonotic diseases and ensuring the safety of animal products. Animal nutrition is a cornerstone of animal and veterinary science, focusing on the dietary needs of animals to promote health, growth, reproduction, and overall well-being. Proper nutrition ensures that animals receive essential nutrients, including macronutrients (carbohydrates, proteins, fats) and micronutrients (vitamins, minerals), tailored to their specific species, life stages, and physiological conditions. By emphasizing a balanced diet, animal nutrition serves as a preventive measure against diseases and enhances recovery from illnesses, reducing the need for pharmaceutical interventions. It addresses key health issues such as metabolic disorders, reproductive inefficiencies, and immune system deficiencies. Moreover, optimized nutrition improves the quality of animal products like meat, milk, and eggs and enhances the sustainability of animal farming by improving feed efficiency and reducing environmental waste. The integration of animal nutrition into veterinary practice necessitates a collaborative approach involving veterinarians, animal nutritionists, and farmers. Advances in nutritional science, such as precision feeding and the use of nutraceuticals, provide innovative solutions to traditional veterinary challenges. Overall, the focus on animal nutrition as a primary aspect of veterinary care leads to more holistic, sustainable, and effective animal health management practices, promoting the welfare and productivity of animals in various settings. This abstract is a trifold in nature as it traverses how education can put more emphasis on animal nutrition as an alternative for improving animal health as an important issue espoused under the discipline of animal and veterinary science; therefore, brief aspects of this paper and they are as follows; animal nutrition, veterinary science and animals.

Keywords : animal nutrition as a way to enhance growth, animal science as a study, veterinary science dealing with health of the animals, animals healthcare dealing with proper sanitation
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