

Popular Article

Nutritional Diseases of Farm Animals

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Introduction

Nutritional diseases in farm animals pose a significant threat to the health, productivity, and well-being of livestock populations worldwide. This article provides a comprehensive exploration of this critical issue, highlighting the impact of modern agricultural practices and the urgent need to address nutritional deficiencies and imbalances. As intensive production methods become increasingly prevalent, with animals confined and fed commercial feeds with limited access to natural pastures, the risk of nutritional disorders rises. This article underscores the importance of proactive measures, specific treatment strategies, and a thorough understanding of the various nutritional diseases affecting different classes of livestock.

Impact of Modern Agricultural Practices

These delve into the repercussions of modern agricultural practices on animal nutrition. It emphasizes the challenges associated with intensive production systems, where livestock are frequently confined and fed commercial feeds with little access to pasture. This shift in farming

practices has increased the likelihood of nutritional deficiencies arising from poor feed selection or low-quality feed, potentially triggering significant nutritional disorders.

The Role of Proper Nutrition

The importance of proper nutrition in ensuring the well-being and productivity of farm animals is well established. Adequate nutrition is essential for growth, development, and overall health. Nutritional deficiencies can lead to a range of health problems, including stunted growth, weight loss, reduced milk or egg production, increased susceptibility to parasites and illnesses, reproductive issues, and high mortality rates among offspring. There is the need for a balanced diet providing all essential nutrients, vitamins, minerals, and amino acids, emphasizing the importance of monitoring feed quality and ensuring access to clean water.

Overview of Nutritional Diseases

The article provides a comprehensive overview of various nutritional diseases that can affect different classes of livestock, including cattle, swine, poultry, and companion animals like dogs and cats. It describes the symptoms, causes, and

prevention strategies for each disease, covering deficiencies in essential minerals such as calcium, phosphorus, iron, selenium, and vitamins like vitamin A, vitamin D and the B vitamins. The impact of overfeeding and underfeeding on animal health and productivity plays a crucial role.

Specific Nutritional Diseases

a. Rickets: Most young animals are susceptible to rickets, characterized by improper bone calcification due to deficiencies in calcium, phosphorus, and vitamin D, primarily affecting rapidly growing long bones and ribs.

b. Ketosis (Acetonemia): Ketosis, or acetonemia, is a metabolic disorder frequently seen in dairy cows during the early stages of lactation. It occurs when the cow's energy demands surpass its energy intake from feed, resulting in the mobilization and breakdown of body fat reserves for energy.

Ketosis in cattle and sheep is caused by an energy imbalance, where energy demands exceed intake, leading to body fat breakdown and accumulation of ketone bodies. Contributing factors include high milk production or late gestation, inadequate nutrition, abrupt dietary changes, and environmental stressors affecting feed intake and utilization. Clinical signs include reduced appetite, weight loss, sweet-smelling breath, lethargy, neurological issues like head pressing or circling, and risk of coma or death in severe cases. Management involves providing balanced diets tailored to energy needs, gradual diet transitions, stress minimization, body condition monitoring, and regular veterinary monitoring for early detection and treatment.

c. Grass Tetany (Hypomagnesemia):

Grass tetany, or hypomagnesaemia, is a metabolic disorder affecting grazing ruminants like cattle and sheep, characterized by low blood magnesium levels. Causes include grazing on magnesium-deficient pastures, high potassium and nitrogen in forages disrupting magnesium absorption, age and production stage, and breed susceptibility. Symptoms range from nervous system abnormalities like muscle twitching and incoordination to severe tetanic spasms, convulsions, and potential death. Prevention involves magnesium supplementation, balanced nutrition with adequate forages, pasture management, and prompt veterinary treatment with intravenous magnesium and supportive care for affected animals.

Selenium Deficiency and White Muscle Disease

Selenium is an essential trace mineral in animal nutrition, acting as a cofactor for antioxidant and immune functions. Deficiency can lead to issues like white muscle disease, a degenerative muscle condition predominantly affecting ruminants. Symptoms include muscle weakness, stiffness, impaired movement, respiratory distress, poor growth, and potential sudden death. Geographic factors like selenium-deficient soils and forages increase risk. Prevention involves selenium-fortified feeds, injectable supplements under veterinary guidance, soil/forage management to enhance selenium levels, and regular monitoring to detect deficiency early and implement timely supplementation protocols to mitigate disease risk in susceptible populations.

Vitamin A Deficiency

Vitamin A deficiency in farm animals can lead to night blindness, hoof and corneal issues, excessive tearing, breathing difficulties, infertility, weakening, and potentially death. Vitamin A is crucial for maintaining vision, especially low-light vision, as well as reproductive function and immune health. Sources include carotenoids like beta-carotene found in green forages. Prevention strategies involve providing appropriate nutrition rich in vitamin A, such as high-quality hay/silage during winter/dry-lot feeding, and avoiding carotene-deficient feeds unless supplemented. Ensuring optimal vitamin A intake through balanced nutrition and supplementation when needed is key to preventing deficiency manifestations in livestock.

Copper and Iodine Deficiencies

Copper deficiency in farm animals can lead to various health issues, including swayback, warble, or enzootic ataxia in lambs. Copper is essential for physiological functions such as connective tissue formation, iron metabolism, and melanin production. Deficiency can cause anaemia, poor growth, and reproductive failure. Copper supplementation is necessary, but careful management is crucial to avoid toxicity. Copper sulphate is commonly used as a supplement, and it can be added to the diet or provided through salt licks. Dietary factors like molybdenum and sulphur can interfere with copper absorption, so these must be considered when supplementing.

Prevention and Treatment Strategies

The document emphasizes the vital

importance of specific treatment and prevention strategies for nutritional diseases, akin to approaches used for diseases caused by microorganisms or parasites. It highlights the need for a proactive approach, including proper feed management, supplementation, and monitoring of animal health.

Prevention strategies outlined in the article include providing balanced diets rich in essential nutrients, ensuring adequate exposure to sunlight for vitamin D synthesis, supplementation with vitamins and minerals, effective pasture management, and prompt veterinary intervention when necessary.

Conclusion

This article underscores the critical role of proper nutrition in maintaining the health and productivity of livestock populations. It emphasizes the significance of proactive measures, specific treatment strategies, and a comprehensive understanding of various nutritional diseases affecting different classes of livestock.

The article highlights the need for vigilant monitoring of mineral levels in the diet, regular veterinary consultation, and careful supplementation to avert nutritional deficiencies. It stresses the importance of key minerals like copper, manganese, and iodine, which play crucial roles in various physiological functions, and the detrimental effects of their deficiencies.

Implementing the recommended strategies, such as providing balanced diets, monitoring mineral levels, supplementing as needed, and maintaining clean living conditions, is essential for safeguarding the health and productivity of farm animal populations worldwide.