



Therapeutic and Supportive Uses of Vitamin-C Supplementation in Poultry

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Abstract

Solvent vitamin C, usually referred to as ascorbic acid, is crucial to the growth, maturity, and immune response of chicken. Vitamin-C supplementation has been used therapeutically and supportively in poultry to improve health, reduce stress, and enhance performance. This article reviews the therapeutic and supportive uses of Vitamin-C supplementation in poultry, including its role in stress reduction, immune function, growth promotion, and egg production.

Introduction

Vitamin-C is a crucial component for the growth and improvement of chickens. It is involved in several metabolic processes, including collagen synthesis, amino acid metabolism, and antioxidant Défense. Poultry have limited ability to synthesize Vitamin-C endogenously, and therefore, dietary supplementation is required to meet their daily requirements. Vitamin-C supplementation has been used therapeutically and supportively in poultry to improve health, reduce stress, and enhance performance. The aim of this article is to review the therapeutic and supportive uses of Vitamin-C supplementation in poultry.

Therapeutic uses

Vitamin-C supplementation has been used therapeutically in poultry to prevent and treat several diseases and health conditions. Vitamin-C is a crucial component for the growth and improvement of chickens. has been shown to enhance the insusceptible function of poultry by stimulating antibody production and phagocytosis. It has also been reported to reduce the severity of respiratory infections in poultry by decreasing the inflammation and oxidative stress in the respiratory tract. Additionally, Vitamin-C supplementation has been used to improve the growth and feed conversion efficiency of poultry by improving nutrient absorption and utilization.



Supportive uses of Vitamin-C supplementation in poultry

Vitamin-C supplementation has also been used supportively in poultry to reduce stress and enhance performance. Poultry are susceptible to various stressors, including heat stress, transport stress, and environmental stress. By lowering levels of cortisol and inflammatory processes in the body, vitamin-C administration has been demonstrated to lessen the deleterious effects of stress on chickens. This can lead to improved performance, reduced mortality, and better overall health of poultry.

Conclusion

Vitamin-C supplementation plays a crucial role in the health, growth, and performance of poultry. Its therapeutic and supportive uses in poultry include enhancing immune function, reducing stress, improving growth, and increasing egg production. However, the optimal dosage and duration of Vitamin-C supplementation in poultry are still under investigation, and more research is needed to determine its efficacy and potential limitations. Overall, Vitamin-C supplementation can be a useful tool for poultry producers to maintain the health and productivity of their flocks.

References

- Shakeri M, Charkhkar S, Ghasemi HA, Khajali F. Vitamin-C supplementation in broiler chickens subjected to chronic heat stress. *J Anim Physiol Anim Nutr (Berl)*. 2019;103(3):817-824.
- Habibian M, Sadeghi G, Ghazi S, Moeini MM. Effects of ascorbic acid on serum cortisol and performance of heat-stressed broilers. *Br Poult Sci*. 2014;55(6):774-781.
- Erel SB, Ozdemir D, Cetin I, Ozer K. Effect of dietary Vitamin-C and E supplementation on performance and lipid oxidation of broiler meat. *Czech J Anim Sci*. 2017;62(8):327-332.
- Mashaly MM, Hendricks GL 3rd, Kalama MA, et al. Effect of heat stress on production parameters and immune responses of commercial laying hens. *Poult Sci*. 2004;83(6):889-894.