

# Impact of climate change on vector-borne diseases in veterinary medicine: A global perspective.

Lina Yang\*

Department of Veterinary Radiology, International University of Korea, Jinju, South Korea

## Introduction

Climate change is transforming the world in unprecedented ways, with far-reaching consequences for both human and animal health. In the realm of veterinary medicine, one of the most significant and concerning impacts of climate change is the alteration of patterns and distribution of vector-borne diseases. Vectors, such as mosquitoes, ticks, and fleas, play a pivotal role in the transmission of diseases like West Nile virus, Lyme disease, and various forms of equine encephalitis. As temperatures rise, weather patterns shift, and ecosystems change, these vectors are extending their reach and intensifying the threats they pose. In this article, we explore the global implications of climate change on vector-borne diseases from a veterinary perspective [1].

Vector-borne diseases have long been a concern in veterinary medicine. They afflict a wide range of animal species, including livestock, companion animals, and wildlife. These diseases not only have direct health impacts but can also disrupt ecosystems and agricultural systems, leading to economic losses and food security issues. Veterinarians are on the front lines of managing and mitigating vector-borne diseases in animals. They play a critical role in disease surveillance, diagnosis, treatment, and prevention [2].

Rising global temperatures create favorable conditions for the survival and proliferation of disease vectors. Insects like mosquitoes thrive in warm, humid environments, which are becoming more prevalent in regions previously considered too cool for vector-borne diseases. As temperatures increase, vectors are expanding their geographic ranges. Diseases once confined to specific regions are now spreading to new areas. For example, cases of West Nile virus in horses have been reported in regions where the disease was previously unheard [3].

Changing Seasonal Patterns: Climate change is causing shifts in seasonal patterns, including prolonged warm seasons and altered rainfall patterns. These changes can extend the active periods of disease vectors, increasing the risk of transmission. Horses are particularly susceptible to vector-borne diseases, including Eastern and Western equine encephalitis and West Nile virus. Climate change has allowed the vectors responsible for these diseases to expand their range, leading to increased cases in horses and necessitating more vigilant vaccination

and management strategies [4].

Lyme disease, transmitted by ticks, has been spreading to new areas due to climate change. This poses a growing threat to dogs, who are also susceptible to the disease. Veterinary clinics in regions previously unaffected by Lyme disease are now diagnosing and treating cases. Vector-borne diseases affect livestock, such as cattle and sheep, leading to economic losses in the agricultural sector. Climate-driven changes in vector distribution can impact animal health and productivity, with cascading effects on food production [5].

## Conclusion

Climate change is reshaping the distribution and prevalence of vector-borne diseases, presenting significant challenges to veterinary medicine on a global scale. As disease vectors expand their reach, veterinarians must adapt their strategies to protect the health of animals and, by extension, human populations. A One Health approach, involving collaboration across disciplines, is essential to understand and mitigate the complex interactions between climate change, vectors, and diseases. Veterinary professionals are at the forefront of this effort, playing a vital role in safeguarding both animal and human health in an era of climate uncertainty.

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\*Correspondence to: Lina Yang, Department of Veterinary Radiology, International University of Korea, Jinju, South Korea, E-mail: Yang22@adm.korea.ac.kr

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