RESUMO - PROTOZOOLOGIA E PATÓGENOS TRANSMITIDOS POR VETORES

INFLUENCE OF ABIOTIC VARIABLES ON THE SEASONAL DYNAMICS OF AMBLYOMMA IN PERI-URBAN AREAS OF THE BRAZILIAN CERRADO (2024-2025)

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The ecology of tick-borne diseases (TBDs) is directly influenced by abiotic factors that modulate vector survival, development, and questing activity in the

environment. In the Federal District (DF), the seasonal transition between dry and rainy periods creates distinct ecological niches that affect the phenology of ixodid ticks. This study aimed to analyze the influence of temperature and relative humidity (RH) on the population dynamics of ticks of the genus Amblyomma in four peri-urban areas of the DF: Santa Maria, Samambaia, Sobradinho, and São Sebastião. Between October 2024 and February 2025, three strategic monitoring cycles were performed using drag sampling and carbon dioxide (CO2) traps. Climatic data were recorded in loco via digital thermo-hygrometer to correlate with the abundance of the 187 collected specimens. Analysis revealed that the vector life cycle is strictly regulated by regional seasonality. During the transition period (October 2024), under an average temperature of 20°C and RH of 67%, a predominance of immature forms (larvae and nymphs) was observed (n=56). These stages exhibit lower resistance to desiccation and a high dependency on specific microclimates for survival. In contrast, during the rainy season (December 2024 to February 2025), with elevated temperatures (24°C-30°C) and RH of 75%, a peak of adults was recorded (70.05%; n=131), evidencing a questing behavior intensified by the favorable humidity. The species Amblyomma sculptum was predominant (93.58%), followed by Amblyomma dubitatum (5.35%), demonstrating high adaptability to the climatic oscillations of the peri-urban Cerrado. It is concluded that the temperature-humidity binomial acts as the primary regulator of the population density of medically important vectors in the region. These findings are fundamental for developing risk predictive models for Spotted Fever, allowing for the identification of critical epidemiological windows of higher vector activity based on seasonal meteorological variations in the Federal District.

Palavras-chave: vector ecology; seasonality; temperature; relative humidity.