Detection of Epizootic Hemorrhagic Disease Virus In Idanha-A-Nova Municipality, Castelo Branco, Portugal

Afonso Rito[1], Margarida Alves[1,2,3,4], David W. Ramilo[1,2,4]

[1] Faculty of Veterinary Medicine, Lusófona University, Lisbon University Centre, Lisbon, Portugal
[2] I-MVET, FMV, Lusófona University, Lisbon, Portugal
[3] CBIOS – Research Center for Biosciences and Health Technologies, Lusófona University, Lisbon University Centre, Lisbon, Portugal
[4] Animal and Veterinary Research Center (CECAV), Faculty of Veterinary Medicine, Lusófona University - Lisbon University Centre, Lisbon, Portugal

Objectives: Epizootic Hemorrhagic Disease (EHD) is a non-contagious disease caused by the Epizootic Hemorrhagic Disease Virus (EHDV), transmitted by *Culicoides* biting midges. It affects both wild and domestic ruminants and poses a significant economic threat due to animal mortality and decreased productivity. Following the recent detection EHDV in Portugal, this study aimed to investigate the presence of this virus in *Culicoides* captured in Zebreira, municipality of Idanha-a-Nova, Castelo Branco, and to estimate the extent of infection in the region through field questionnaires with local livestock producers.

Materials and Methods: *Culicoides* insects were captured using miniature CDC light traps between September and November 2023. A total of 19 representative insect samples were selected for molecular analysis. Detection of EHDV was carried out using reverse transcription real-time polymerase chain reaction targeting the Seg-9 genomic segment. Also, local farmers, whose ruminants showed clinical signs consistent with EHD, were invited to complete questionnaires designed to collect information on clinical presentation, morbidity and mortality rates, herd management, environmental conditions, and disease prevention.

Results: Of the 19 insect samples analyzed, 13 tested positive for EHDV, corresponding to a positive rate of 68.0%. Questionnaire data revealed morbidity rates ranging from 0.6% and 51.4% and an overall mortality rate of 3.8%, values that are consistent with those reported in the literature.

Conclusions: The detection of EHDV in a high percentage of *Culicoides* insect samples confirms active viral circulation in Zebreira and provides valuable epidemiological insights into the presence of the virus in the region. The morbidity and mortality rates reported by farmers highlight the potential economic and animal health impact of EHD in Portugal. These findings underscore the importance of continued entomological surveillance and epidemiological monitoring to inform timely control strategies and mitigate the spread of EHDV.
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