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10th International Scientific Meeting Days of Veterinary Medicine – 2024 and 2nd European Conference on Veterinary and Medical Education

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Skopje, 2024

O4**INFECTIOUS HEMATOPOIETIC NECROSIS IN NORTH MACEDONIA: CURRENT STATUS AND FUTURE CHALLENGES**

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The infectious hematopoietic necrosis (IHN) poses a significant risk to salmonid aquaculture, especially in intensive farming environments. Surveillance programs for viral diseases in aquatic species were initiated in North Macedonia in 2015, leading to the initial detection of IHN in 2018 and its widespread outbreak in 2020. This research investigates the prevalence and genetic traits of IHN virus (IHNV) in farmed rainbow trout (*Oncorhynchus mykiss*) in North Macedonia following the 2020 spread of IHN. In North Macedonia's aquaculture, rainbow trout is the dominant species, with 54 officially registered fish farms which number fluctuates annually. For the 2023 surveillance program, active monitoring was conducted on 22 fish farms, excluding those where IHN was previously detected. Three pooled samples were collected from each farm, comprising a total of 10 fish organs including the kidney, spleen, and heart. Detection of the IHNV was carried out using protocols recommended by the DTU Aqua, European Reference Laboratory for Fish and Crustacean diseases developed by Cuenca A et al. (2020). Out of the 22 sampled fish farms, 5 tested were positive for IHN (22.73%) indicating its spread to new locations. This brings the total number of IHN-positive fish farms in North Macedonia to 34 out of 54 farms (62.96%). Genetic analysis revealed that the recent IHN isolate and the first isolate from 2018 (MAKIHNV1, MN641902) share over 99% similarity, suggesting a common origin. The isolates were categorized in clade E-1 of the European genogroup E. Phylogenetic examination connected them to isolates from Germany, Italy, and Iran. In conclusion, despite existing control programs, the ongoing spread of IHNV highlights the necessity for improved biosecurity measures. This research emphasizes the extensive spread of the virus, its implications on aquaculture, and the risk to autochthonous salmonid species. Continuous monitoring, strict biosecurity measures, and focused interventions are essential to control and reduce the transmission of IHNV among aquaculture facilities which will prevent outbreaks and maintain the long-term productivity of aquaculture sectors.

Keywords: infectious hematopoietic necrosis virus, rainbow trout, cold-water aquaculture, phylogeny