ID der Kurzfassung : **212**

Geographic dispersal of West Nile and Usutu virus in Berlin, 2023-24

Inhalt

West Nile virus (WNV) and Usutu virus (USUV) are closely related arboviruses that circulate between birds and *Culex* mosquitoes. WNV infection can cause severe neurological disease while USUV is considered non-pathogenic in humans. This study examined the geographic dispersal and infection rates in mosquitoes of both viruses across Berlin.

Mosquitoes were collected across Berlin covering 50 sites in 2023 and 75 in 2024, and tested for WNV and USUV infection by RT-PCR. In total, 27,793 and 78,434 mosquitoes were collected in 2023 and 2024, respectively. For 2024, two-thirds of the samples have been analysed so far.

We observed a strong increase of virus-positive sites and dispersal of both viruses across the city. WNVsite-specific detection rates increased from 32% to 69% and for USUV from 42% to 87%. With respect to infection rates, a slight decrease was observed for WNV while those of USUV massively increased. WNV was detected in 105 mosquito pools (3.1 %, minimum infection rate (MIR) = 3.78) in 2023 and in 147 pools (2.6%, MIR = 2.94) in 2024. USUV was found in 84 mosquito pools (2.5%, MIR = 3.0) in 2023 and in 247 pools (43.7%, MIR = 4.94) in 2024. Genome sequencing of detected strains is ongoing to investigate if viruses emerged from local amplification or were introduced, and to analyze their phylogeographic spread.

Our study provides evidence for the extensive circulation and ongoing distribution of WNV and USUV in Berlin. Public awareness campaigns should be considered.

Keywords

West Nile virus, mosquito-borne virus, vector ecology, zoonotic risk, one health

Registration ID

53

Professional Status of the Speaker

Postdoc

Junior Scientist Status

No, I am not a Junior Scientist.

Track Klassifizierung: One Health in Public Health

Typ des Beitrags: Oral presentation