Contribution ID: **479** Type: **Poster presentation**

Screening of overwintering female Culicidae for mosquito-borne viruses

Tuesday, October 6, 2026 4:15 PM (1 minute)

Mosquitoes can transmit numerous pathogens that are dangerous to human and animal health. In temperate climates, the major mode of arbovirus overwintering is in their infected vectors. Thus, hibernating female Culex mosquitoes play an important role in the winter persistence of West Nile virus (WNV) and Usutu virus (USUV) in Europe. To investigate overwintering mosquito populations in northeastern Germany for mosquito-borne viruses, female mosquitoes were manually collected from more than 190 caves, bunkers and cellars during the winters of 2024/2025 and 2025/2026. In total, more than 52,900 mosquitoes representing seven taxa were collected, including approximately 46,500 individuals of the Culex pipiens complex. Additional taxa detected were Culiseta annulata (n = 4,872), Cx. territans (n = 384), Cx. hortensis (n = 19), Uranotaenia unguiculata (n = 2), Aedes cinereus/geminus group (n = 1), and Anopheles maculipennis complex, including An. daciae (n = 713), An. messeae (n = 320) and An. maculipennis (n = 99). RT-qPCR analyses of individual mosquitoes and mosquito pools (≤10 specimens) yielded only a single virus detection (USUV) in one pool of the Cx. pipiens complex, consisting of ten individuals of the biotype pipiens, collected during the winter of 2024/2025. The low detection rate likely reflects a temperature-dependent lack of viral replication during mosquito hibernation, resulting in viral RNA levels below the detection limit.

Keywords

`arbovirus, Culicidae, northeastern Germany, mosquito-borne pathogens, overwintering`

Registration ID

`OHS26-0133`

Professional Status of the Speaker

`PhD Student`

Junior Scientist Status

`No, I am not a Junior Scientist.`

Author: TELLI, Nihal (Friedrich-Loeffler-Institut)

Co-authors: Dr WERNER, Doreen (Leibniz-Centre for Agricultural Landscape Research); Dr KAMPEN, Helge (Friedrich-Loeffler-Institut)

Presenter: Dr KAMPEN, Helge (Friedrich-Loeffler-Institut)

Session Classification: Coffee & Poster Viewing II

Track Classification: Vectors