

Virology, Infectious Diseases and COVID-19

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Usutu Virus Potential Vectors and their Diversity in Iran: A Neglected Emerging Arbovirus

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Abstract

Introduction:

Usutu Virus (USUV) is a vector-borne flavivirus within the family of Flaviviridae; its reservoirs and vectors are birds and mosquitoes, respectively.

Methods: At first, electronic databases were searched with a date range from 2000 to 2018 to find the *Culex* species that transmit the disease and then for determining the diversity of those, mosquito larvae were collected from six places in three main environmental categories using the dipping technique.

Results: In total, 1369 specimens belonging to 10 different species were collected and identified, as follows: *Cx. hortensis* Ficalbi, *Cx. laticinctus* Edwards, *Cx. mimeticus* Noë, *Cx. perxigus* Theobald, *Cx. pipiens* Linnaeus, *Cx. modestus* Ficalbi, *Cx. sinaiticus* Kirkpatrick, *Cx. theileri* Theobald *Cx. torrentium* Martini and *Cx. tritaeniorhynchus* Giles. Four species involved as vectors of USUV in other countries are printed in bold. *Cx. pipiens*, as the main vector was the most frequent species in rural areas, share its larval habitats with *Cx. torrentium* (similarity > 0.9) and reached its peak in August. Overall, in the present study, there was a significant positive relationship between mean temperatures and abundance of mosquitoes ($r = 0.75$, $P = 0.005$).

Conclusion: In the present study, some species involved as main vectors of USUV in other countries and their ecological features were recorded. Based on these results, the possibility of the emergence of USUV in Iran exists.

Keywords Mosquitoes, Usutu virus, Species diversity, Flavivirus