

VectorNet



ISSUE N.1

Welcome to the first **VectorNet** newsletter. **VectorNet** is a joint project of the European Food Safety Authority (EFSA) and the European Centre for Disease Prevention and Control (ECDC), which started in May 2014, and is now in its second iteration (2019-2023). The project is supported by a Scientific Coordination Committee with members from the Public and Animal Health community. In this newsletter we address what was continued and was changed, and share the highlights from the first period of the current project. In this project period, **VectorNet** aims to publish two newsletters per year.

UNLOCKING AND INTERPRETING DISEASE VECTOR DATA

Vector-borne diseases are illnesses that are caused by pathogens that are transmitted by arthropods. In Europe, humans and animals are predominant threatened by pathogens transmitted by ticks, mosquitoes, sandflies and biting midges. The intricate biological processes underlying the interactions between pathogens, their vertebrate hosts and the vectors make the predictability of disease risk challenging. Monitoring of disease cases alone is not enough to provide the information needed to mitigate or control these diseases, and information on the presence, abundance, seasonality and distribution of vectors is vital. **VectorNet** unlocks and interprets disease vector data to support the risk assessment process by enabling effective early warning, surveillance, and control of vectors.



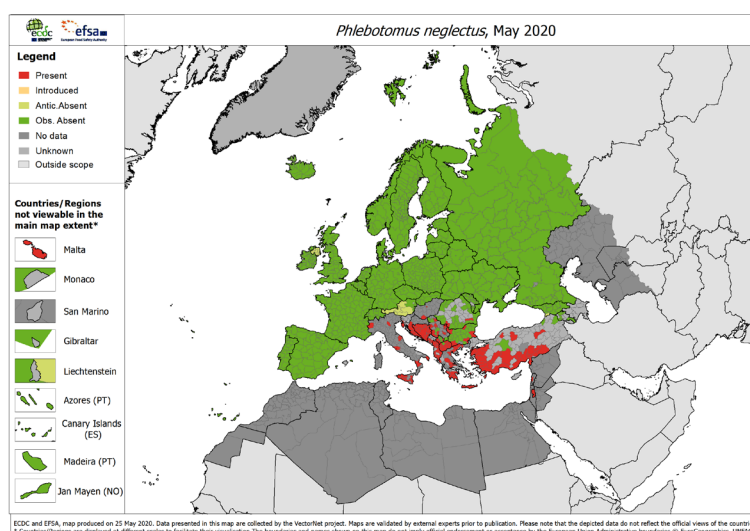
SHAPING A VECTONET ENTOMOLOGICAL NETWORK

One of the biggest successes of the early years of **VectorNet** was the creation of a sense of connection between medical and veterinary entomologists and professionals interested in vector-borne diseases in the public and veterinary health sector in a large **VectorNet** Community. While maintaining this sense of community, in this interction, VectorNet supplements the VectorNet community with a more structured Entomological Network that is harmonized with other networks within

the European public and animal health agencies The members act as a central contact point for advice on risk assessments carried out by ECDC and EFSA concerning vector-borne diseases as well as for local entomological surveillance updates; they also alert the consortium to any significant issues in their country. In this way **VectorNet** is helping to better embed entomological monitoring and knowledge in national and international vector-borne disease surveillance systems.

FROM GUESSING TO GIS-ING

Although vectors do not stop at national borders, many health authorities are only able to focus their preparedness on their own geographical region. Easily accessible transboundary information would enable them to expand their perspectives and coordinate more effectively with their neighbours. Further, ECDC and EFSA recognise that the prevention and management of vector-borne disease can be best addressed in a One Health approach that includes entomological surveillance. The distribution of the main vectors in Europe has been mapped using a geographic information system (GIS). Distributions provide the first indications of a vector-borne disease risk, in that a vector needs to be present before transmission of a vector-borne pathogen can occur; if vectors are absent, transmission cannot occur. **VectorNet** continues to collect presence/absence vector data.



MORE THAN JUST “TO BE OR NOT TO BE”

Pan-European mapping of the presence and absence of disease vector provides important information. However, data on the number of vectors, or abundance, is a next step to assess potential pathogen transmission s at a certain time and location. Collecting such comprehensive abundance data is, however, expensive and time consuming because it requires greater standardisation and repeated sampling. VectorNet develops strategies to unlock and interpret abundance and seasonality data. VectorNet also provides scientific support and capacity building on entomological topics to EFSA and ECDC for their activities



VectorNet's kick-off meeting took place on 17-18 Sept. 2019 in Stockholm, Sweden.

NEWS FROM THE NETWORK

The first Annual Entomological Network Meeting (AENM) was held from 10-12 March 2020 in Amersfoort, the Netherlands. The meeting focused on introducing ECDC and EFSA to the entomological network members, giving an overview of ongoing and planned work, but focusing on VectorNet networking strategies and how members could be involved in risk assessments

MAPPING

ECDC migrated the data from a semi-relational to relational database to meet new data warehouse standards and to make the data compatible with ECDC's data warehouse. The online VectorTool has been decommissioned and data can be submitted to the data warehouse through the VectorNet vector group leaders (VGLs). For more details please contact the VGLs or send an email to VectorNet_admin@rivm.nl.



Sahelian ram affected by Rift Valley fever virus; Photo courtesy of Dr Assane G Fall and Dr Modou Moutapha

RECENTLY PUBLISHED

VectorNet provided EFSA with entomological input for its scientific opinion “Rift Valley fever – epidemiological update and risk of introduction into Europe”. VectorNet delivered the following technical reports:

- [Assessment of the probability of entry of the Rift Valley fever virus into the EU through active or passive movement of vectors.](#)
- [Rift Valley Fever vector spatial distribution models: Probability of presence.](#)
- [Rift Valley Fever vector spatial distribution models: Vector Abundance](#)

New and updated vector distribution maps: <https://www.ecdc.europa.eu/en/disease-vectors/surveillance-and-disease-data>

IMPORTANT DATES

June: New fact sheets on Culex Pipiens and sandflies published

August/September: Webinar: Mechanical transmission of pathogens by vectors: Epidemiological implications and gaps

November/December Webinar: Surveillance of vectors on Ports of Entry

CAPACITY BUILDING

VectorNet delivered a webinar entitled “VectorNet Maps: What are they and how to use them” which is available on the ECDC Virtual Academy (<https://eva.ecdc.europa.eu/>). This webinar took the form of a series of eight short videos (with a combined duration of 45 minutes) in which experts explained, in a technically friendly way, the importance of mapping in the epidemiology and risk assessment for human and animal vector-borne diseases, together with advice on how to interpret the maps. As well as the videos, the webinar site also provides relevant links and a forum for discussing questions.

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https://ec.europa.eu/eusurvey/runner/VectorNet_Community_2020