PALE-Blu

Understanding pathogen, livestock interactions involving bluetongue

What is Bluetongue?

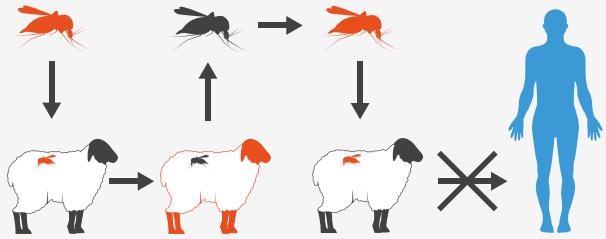
Bluetongue virus is one of the most important livestock pathogens, capable of infecting all domesticated and wild ruminant species. Also known with the acronym BTV, it causes a severe clinical disease, Bluetongue, and fatalities primarily in sheep and some deer species, reducing also productivity in several ruminants, cattle included.

Transmission and current situation in Europe

BTV is transmitted by Culicoides biting midges and was initially confined to tropical and sub-tropical regions. Now it is endemic in several Southern European countries. Studies conducted primarily by members of the PALE-Blu Consortium have identified new introductions or discoveries of the virus in Europe each year. In the last ten years, at least seven novel and atypical BTV serotypes have been identified. The atypical serotypes do not cause the overt disease. This articulated outbreak situation emphasises the importance for the EU of having in place robust collaborations and surveillance activities with Northern African authorities on public and animal health for early warning systems and the assessment of proper preventive measures.

How is bluetongue transmitted and spread?

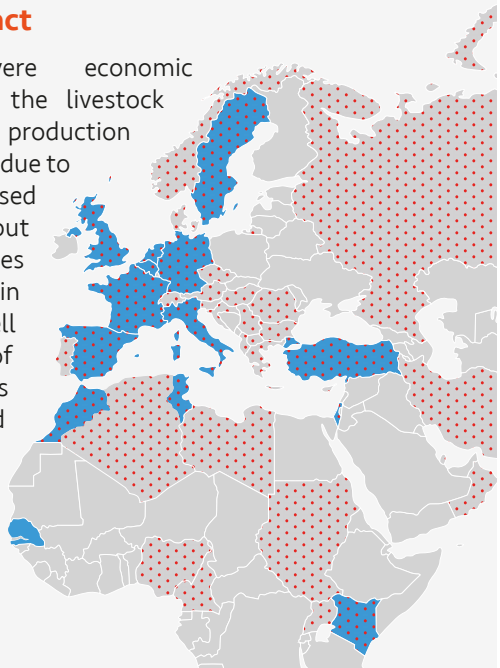
Culicoides midges can become infected with BTV when they bite an infected animal. They can then transmit the virus when they bite an uninfected host. Once a midge is infected it will be a carrier for the rest of its life. BTV is not known to affect humans.



Source: adapted from Pirbright Institute

Economic impact

BTV has severe economic repercussions for the livestock industry and food production in Europe, not only due to direct losses caused by the infection, but also indirect losses due to restrictions in animal trade as well as the costs of control measures (vaccination) and surveillance.

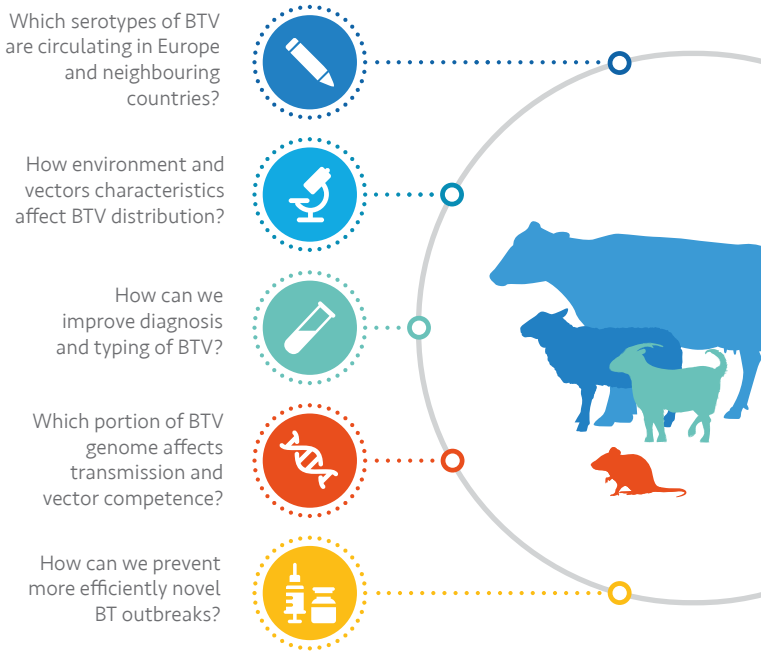


Pale-Blu partners

BTV Outbreaks

Prevention for livestock protection

The only valid strategy for BT prevention is vaccination of susceptible animals, which is currently accomplished by inactivated vaccines (made from viruses that have been killed and cannot cause disease).
PALE-Blu project aims at investigating the following main issues:



An extensive research network to achieve strategic objectives

PALE-Blu brings together leading laboratories in Europe with established track records working on the epidemiology, modelling, vaccinology, diagnostic systems, vector biology, pathogenesis, transmission and control of BTV outbreaks, together with established institutes in several other countries that represent a potential 'source' of the BTV strains that continue to invade Europe.
Thanks to such multidimensional partnership, PALE-Blu is intended to analyse the interplay between BTV, its ruminant hosts, insect vectors and the environment. Furthermore, the project will also refine current diagnostic systems, reducing costs and increasing speed, while also improving surveillance for existing sampling strategies, thereby increasing the ability to detect co-circulation of multiple BTV serotypes.

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PALE-Blu Project - Understanding pathogen, livestock, environment interactions involving bluetongue virus
www.paleblu.eu

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