

Towards understanding bluetongue outbreaks

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A recent article published in *Virology*, reports the identification of a bluetongue virus strain that caused the northern European Bluetongue outbreak in 2006. Comparison of the virus strain with the sequences of other previously isolated strains showed that it originated in sub-Saharan Africa, rather than from vaccine strains or strains circulating in southern Europe.

Bluetongue (BT) disease or catarrhal fever is a non-contagious, insect borne viral disease of ruminants, mainly sheep. It is characterized by high fever, excessive salivation, swelling of the head and neck which can lead to cyanosis of the tongue (after which the disease is named). BT is caused by the bluetongue virus (BTV) and due to its economic significance BTV has been the subject of extensive molecular, genetic and structural studies.

The disease has been observed in Australia, the USA, Africa, the Middle East, Asia and southern Europe. Its occurrence is seasonal in the affected countries, subsiding when temperature drop and hard frosts kill the midges that transmit the disease. It has been spreading northward since the late 90s, perhaps as a result of global warming.

In August 2006, the record temperatures experienced in northern Europe coincided with the first outbreak of BT in the Netherlands, Belgium, Luxemburg, and much of Germany. In the article Peter Mertens and 24 co-authors from six different institutes describe the sequence analysis of the full genome of this BTV strain and compare it to other BTV strains

(Virology, doi:10.1016/j.virol.2008.04.028). Their results indicate that despite the high levels of nucleotide identity with other European strains, it represents a new strain introduction, originating from sub-Saharan Africa.

"Such timely and increasingly important insights into the origins of emerging viruses will lead not only to an increased understanding of how viruses like BTV spread, but also to rational vaccine development", said Barbara Sherry, one of the Editors of Virology.

Source: Elsevier

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