

## Press release

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### Bluetongue and epizootic haemorrhagic disease: three emergence events in Europe

Since summer 2023, France has been facing two outbreaks of viruses transmitted by midges of the genus *Culicoides* to domestic and wild ruminants: bluetongue virus (BTV) and epizootic haemorrhagic disease (EHD). In August 2024, a third event emerged, with an exotic strain of BTV introduced in the Netherlands that is circulating in Belgium, Luxembourg, Germany, the United Kingdom and, more recently, in Denmark and Switzerland. In the context of an agreement with the French Ministry of Agriculture, CIRAD is drawing on the entomological expertise it acquired during the BTV health crisis of 2009-2012 to actively participate in international animal health surveillance\* efforts, in collaboration with INRAE, ANSES and the General Directorate for Food (DGAL).

*“Culicoides are small midges that transmit viruses to domestic and wild ruminants, with significant economic impacts on animal movements”, says Claire Garros, a researcher specialising in these insects at CIRAD.*

Between 2009 and 2017, CIRAD was mandated by the General Directorate for Food (DGAL)\*\* to coordinate the monitoring of *Culicoides* populations in mainland France. Since then, teams from the CIRAD-INRAE ASTRE research unit have been building scientific and technical expertise on these midge vectors and the risk of virus transmission to livestock.

*“After a first bluetongue health crisis between 2002 and 2012 in mainland France, the emergence of Schmallenberg virus in 2011 on the continent, and the re-emergence of bluetongue in 2015, France is once again facing three different emergence events”, says Claire Garros.*

**A BTV outbreak began in August 2023 in the southern part of the Massif Central**, causing mortality in cattle and sheep. After analysis, the ANSES National Reference Laboratory confirmed that it was a variant of BTV serotype 8, for which the vaccine remains effective. Two strains of serotype 8 are thus present in mainland France: serotype 8 and its variant. The new strain has since spread and caused clinical cases observed in France, particularly in the Pyrénées-Orientales, Aude and Ariège departments. These detections are characterised by severe clinical cases and high mortality. In response to these outbreaks, CIRAD has organised three entomological missions to assess the abundance of *Culicoides* populations across the altitudinal gradient and to rule out the presence of a species with Afrotropical and Mediterranean distribution, *Culicoides imicola*, which colonised a small territory in the Pyrénées-Orientales department between 2008 and 2011. *“The analysis of captures is still ongoing, but we are already observing high abundance at some high-altitude capture sites”, says Maxime Duhayon, a senior entomology technician at CIRAD.*

At the same time, **since September 2023, southwestern France has experienced its first outbreaks of epizootic haemorrhagic disease (EHD)**, with significant health impacts for cattle. *“The disease has been spreading since 2022 in the Iberian Peninsula and the Italian islands (Sicily, Sardinia), after introduction from North Africa. There was no vaccine available for this virus, but in August 2024, a vaccine was granted temporary authorisation for use (ATU)”, says Carlène Trevennec, a research engineer at INRAE and co-coordinator of international health surveillance.*

The ministerial decree of 25 October 2023 sets out measures for the surveillance, prevention and control of epizootic haemorrhagic disease, with the creation of a regulated zone encompassing all municipalities within a 150-kilometre radius of the declared outbreaks. The cattle, sheep, goats and deer on farms within this

regulated zone cannot leave the area, except for certain exemptions. Livestock management measures are also recommended, such as the disinsectisation of animals and transport vehicles. *“There is no miracle vector control method for Culicoides. Current tools have limitations and do not provide full individual protection. Disinsectisation is a tool to complement vaccination when available”*. CIRAD is working with the Fédération Régionale des GDS AURA to study practices and impacts of insecticide treatments during animal transport.

**The latest emergence event in France in August 2024** involves BTV serotype 3. The outbreak began in the Netherlands in September 2023, spreading rapidly throughout the country. The virus was later detected in Belgium, Germany, the United Kingdom and, more recently, in Luxembourg, Denmark and Switzerland. To date, around 340 outbreaks have been recorded in the northeastern quarter of France, with a voluntary vaccination campaign underway to mitigate the impacts of the disease.

As part of the **VECTOCLIM project** (VECTOR-borne diseases and CLIMate change in Occitanie, RIVOC project coordinated by the University of Montpellier and funded by the Occitanie Region), CIRAD is developing population dynamics models for *Culicoides* and epidemiological models to assess the impact of recent and future climate change on the transmission of *Culicoides*-borne viruses. *“Drawing on entomological data collected since 2009 by CIRAD and its partners, as well as data from the literature, I am developing a model of the temporal and spatial dynamics of Culicoides populations. The goal of this model is to better understand potential changes in the seasonal activity and abundance of European Culicoides populations under different climate scenarios”*, says Pachka Hammami, a researcher from the University of Montpellier hosted at CIRAD in the ASTRE unit.

Finally, to assist health professionals and partners in managing these three epizootics, CIRAD participates in the ANSES and ESA platform working groups and contributes to the scientific and technical expert reports produced by ANSES for the French Ministry of Agriculture. It also supports the recommendations regarding vector control measures and epidemiological surveillance.

#### **\*The ESA international health surveillance platform**

**The French animal health epidemiological surveillance platform (ESA platform)** provides methodological and operational support to the competent state services and other surveillance system managers for the design, deployment, coordination, promotion and evaluation of health and biological surveillance systems in France.

It conducts **international health** surveillance, jointly coordinated by INRAE and ANSES, which aims to identify, analyse and monitor signals concerning threats to animal health in France.

The production process involves monitoring both national and international signals, based on official and unofficial data sources. A multidisciplinary network of national and international experts (ANSES, CIRAD, DGAL, INRAE) is mobilised to sort, analyse and contextualise these signals. The analysis of these signals in relation to health threats leads to the publication of weekly international health surveillance reports.

**Find out more:** [International health surveillance | ESA PLATEFORM \(plateforme-esa.fr\)](#)

**Find out more about member organisations of the ESA platform:** <https://www.plateforme-esa.fr/fr>

**\*\*Ministry of Agriculture and Food Sovereignty**