

# EPIDEMIOLOGY OF BLUETONGUE IN FRANCE

## (1998-2024): SPREAD DYNAMICS AND IMPACTS ON ANIMAL HEALTH



FACULTAT DE VETERINÀRIA



UAB

Universitat Autònoma de Barcelona



FINAL DEGREE PROJECT - FEBRUARY 2025 - CLÉMENCE BESNIER

### INTRODUCTION



Bluetongue disease (BTV) is a viral illness affecting ruminants, spread by Culicoides insects. It is not contagious to humans or between animals. There are 29 serotypes, with most being pathogenic. Recent outbreaks in Europe, including BTV-3 outbreak in France in 2024, have caused economic and health impacts.

### METHODOLOGY



The study used PubMed with the keywords "epidemiology And France And Bluetongue virus." I used the ESA platform for serotype tracking and Health Groups (GDS) for data on the virus's impacts and control measures.

### RESULTS



Since 2000, several BTV serotypes have been reported in Corsica and mainland France, including BTV-2, -4, -8, -1, -16, and, since 2024, BTV-3 (Figure 1). In Corsica, after the eradication of BTV-2, vaccination campaigns have limited outbreaks, but cases of BTV-4, BTV-8, and coinfections in 2023 indicate persistent circulation. In mainland France, BTV-1 (2007-2010) was eradicated, while BTV-8, which emerged in 2006, remains in low circulation following its reappearance in 2015. BTV-4, detected in 2017, spread in 2018. Since 2018, BTV-4 and BTV-8 have been enzootic in France.

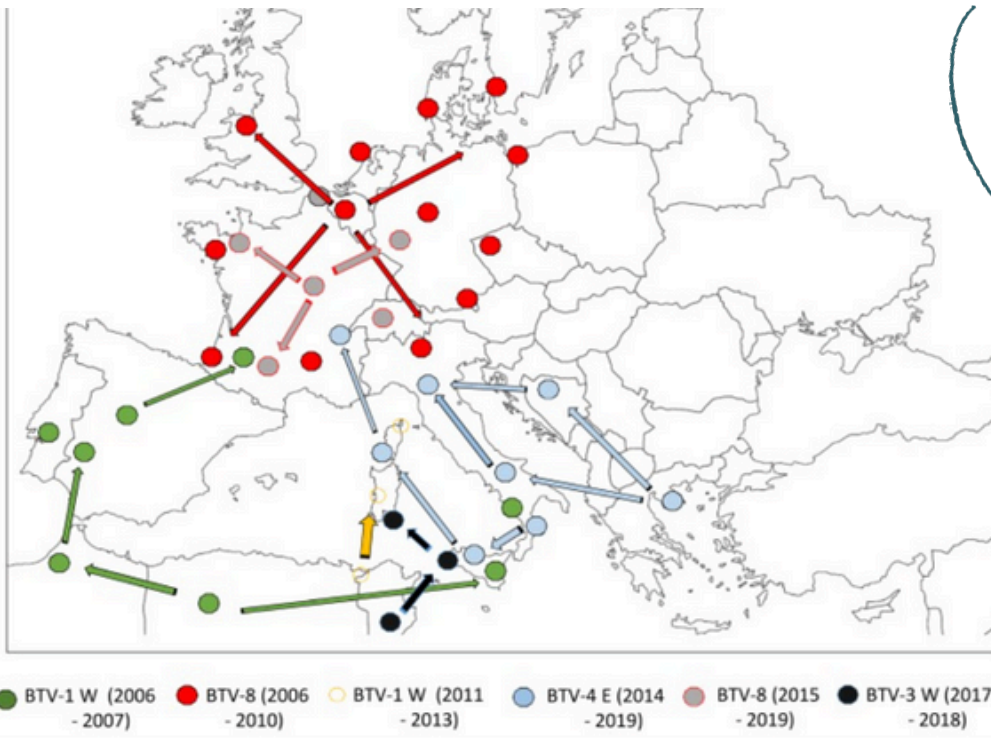
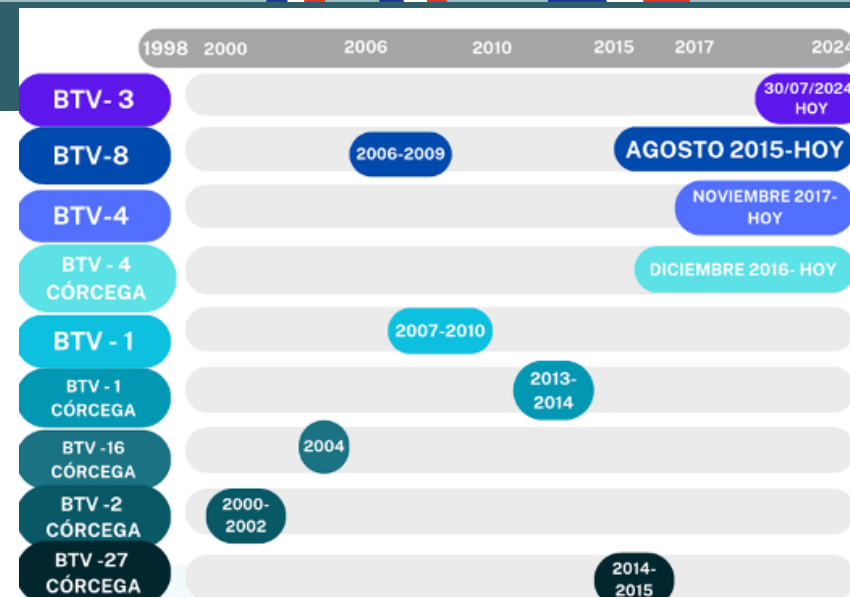


Figure 2 : Spread of serotypes and strains of BTV from 2006 to 2019.

In 2024, BTV-3 emerged in northern France, leading to the implementation of control measures and the establishment of regulated zones (Figure 3).



Figure 3 : Geographic distribution of suspected and confirmed outbreaks caused by BTV-3 serotype LA in France as of 08/08/2024.

### DISCUSSION



BTV symptoms varied by species: sheep showed facial swelling, nasal discharge, and snout sores; cattle had similar signs with udder lesions; and goats experienced swelling, discharge, and lameness. Reproductive issues, including abortions and reduced fertility, were common in small ruminants. Wild ruminants had low infection rates with limited spread. Economically, BTV-8 caused severe losses, particularly in sheep farms, exceeding 100% of gross margins in some cases, while cattle farms faced impacts from mortality, reduced fertility, and breeding complications.

### CONCLUSION



Over 26 years, Bluetongue (BTV) in France has seen outbreaks, particularly with BTV-8 and BTV-4. Vaccination helped control it, but new strains like BTV-3 remain a challenge.

Ongoing monitoring is crucial (Figure 4), as shown by the recent detection of BTV-12 in the Netherlands in 2024.

Figure 4 : Map of clinical cases of MHE and LA (data as of 29/11/2024)

