

Updated Outbreak Assessment #3

Bluetongue virus (BTV-8) in Germany and Belgium

29 March 2019

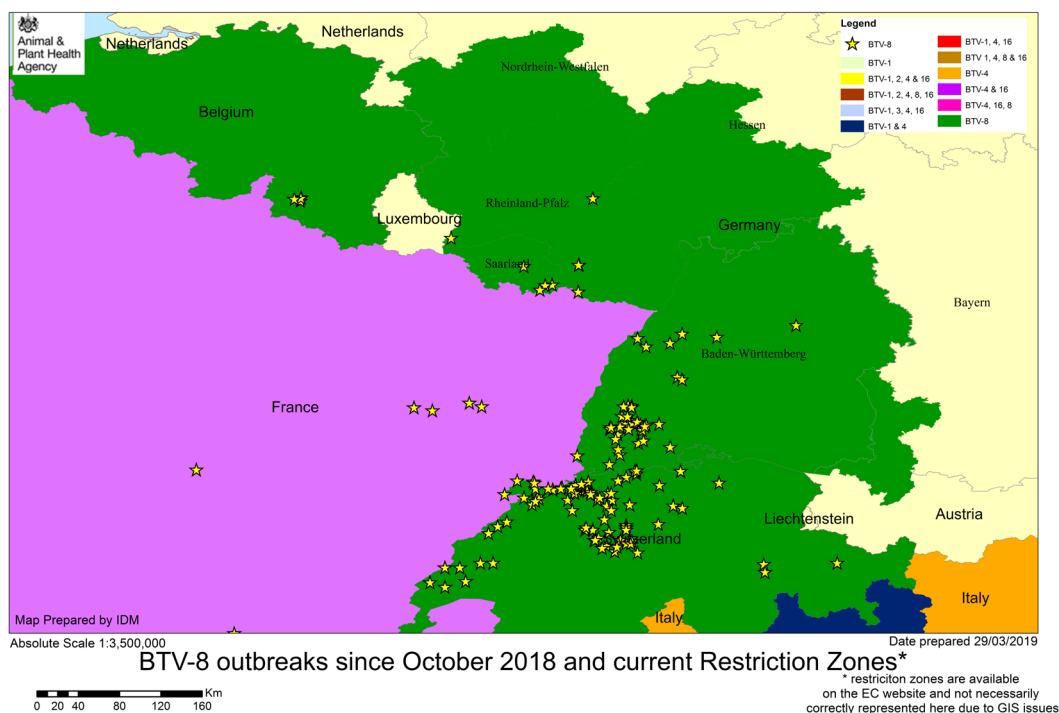
Ref: VITT/1200 BTV-8 in Germany and Belgium

Disease report

This outbreak assessment serves to report new information on trans-placental transmission in cattle of the bluetongue virus serotype 8 strain (BTV-8) occurring in France and an update on the European situation. This is timely in view of the approaching start of the *Culicoides* biting midge vector season.

Since our last outbreak assessment on 21 January 2019, **Germany** has reported a further 22 outbreaks of BTV-8 in south-western Germany, now totalling 52 outbreaks since the first in December 2018 (see map). These were identified as part of a surveillance programme in this region. Outbreaks in the south-western regions along the borders with France and Switzerland were not unexpected, given the circulation in those countries in the last few months, but the more recent reports from Germany encroached on the Luxembourg, Belgian and Netherlands borders

(<https://www.fli.de/de/aktuelles/tierseuchengeschehen/blauzungenkrankheit/>).



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In a new development, four outbreaks of BTV-8 have been reported in southern **Belgium** in the Luxembourg region. Belgium had been declared officially free of BTV-8 after the 2006-2009 epizootic in northern Europe in February 2012. The cases were detected as a result of winter surveillance and confirmed that virus circulation has occurred around this region.

Both Germany and Belgium have in place BTV-8 restriction zones (see map). Live ruminants (in particular cattle, sheep and goats) may only be moved from these restriction zones to free areas (not under restriction for BTV-8) if the animals have been vaccinated against BTV-8 at least 60 days prior to movement or vaccinated and tested for BT with a negative result in accordance with Annex III of European Commission Regulation 1266/2007/EC.

Situation assessment

Germany

The outbreaks since the previous outbreak assessment in January are all within the same Landers and in this respect the virus does not appear to have spread further north or east within Germany since January. Post import testing is in place for consignments of ruminants entering the UK from the restriction zones.

Belgium

One outbreak of BTV-8 was detected on the 14th February 2019 in a cattle holding (in 2 out of 111 cattle) in the Luxembourg region of southern Belgium, as a result of winter surveillance. Following intensified surveillance in a 5km area around the premises, disease was confirmed in three more holdings (AFSCA, 2019). This secondary spread was reported as being caused by vector transmission, although still early in the vector season for much of Europe.

France

Since October 2018, France has reported just ten outbreaks to the European Animal Disease Notification System . These were in the regions of Vosges, Rhone, Cote d'Or, Puy de Dome and Loire. Eight were reported in cattle and two in sheep. Five of the outbreaks were reported as clinical cases. No cases of BTV-4 have been reported in this period.

Of note, an increase in trans-placental transmission of BTV-8 in cattle in France has been reported. Since mid-December 2018, cases of calves born blind, small and dying at a few days of age have been reported in different Departments in France (Zientara et al, 2019). These cases started to appear in mid-December 2018 with the number reported increasing considerably since January 2019. Positive PCR of blood and calves' spleen confirmed

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BTV-8 infection while tests for Schmallenberg virus were negative suggesting these clinical signs were attributable to BTV-8. When tests were carried out on PCR-positive blood samples from calves (less than one week old and born during the vector inactivity season) in affected farms, 2 to 15% of new-born calves were infected. As of March 11, 2019, the national reference laboratory received and analysed 418 blood samples from such calves and 94% of these were positive for BTV-8 by RT-PCR.

The 2006/9 BTV-8 strain also showed some trans-placental transmission and increased numbers of abortions and dummy calves were reported in Belgium by the end of 2007 and beginning of 2008. Vercauteren et al. (2008) described 29 cases of hydranencephaly (the complete absence of cerebral parenchyma) in bovine foetuses and calves in Belgium associated with the 2006/9 BTV-8 infection very early in gestation. However, the rate of trans-placental transmission in the current re-emerging strain in France appears much higher than for the previous strain. Thus, with regards to the current re-emerging strain, it appears that the circulating virus strain causes fewer clinical signs in the adult cows but gives rise to more clinical problems in calf foetuses. This is consistent with the results of studies in adult sheep. Flannery et al. (2019) reported that the re-emerging BTV-8 strain produced reduced viraemia and pathogenicity in infected sheep and showed reduced *Culicoides* vector competence compared to the 2006/9 strain. This suggests a phenotypic difference between the 2006/9 BTV-8 strain and the re-emerging strain.

Trans-placental transmission is of interest as a possible mechanism of over-wintering of the virus in the absence of midges in northern Europe, but this increase also means the economic impact of BTV-8 may be underestimated.

Conclusion

We are now approaching the start of the *Culicoides* biting midge vector season in northern Europe and the UK. In this respect, the month of March (and early April) presents a negligible risk of introduction of BTV-8 from the trade of cattle or sheep from northern Europe which have sufficient residual viraemia (from infection in late autumn 2018) to infect UK midges and hence infect UK cattle. However, given the Belgian and German cases suggest there is virus circulation occurring presently, by late April, some livestock may be sufficiently viraemic to infect UK midges if moved to the UK. The restriction zones currently in place across the whole of Belgium and France and parts of Germany will minimise risk of importation of infected cattle to the UK, and we are considering whether to extend enhanced post import checks to cattle from those unrestricted regions in the Netherlands and Luxembourg within 150 km of outbreaks. The risk of entry of BTV-8 to the UK is thus considered to be LOW for April and May.

The role of increased trans-placental transmission of the re-emerging BTV-8 strain in northern Europe in terms of an “over-wintering” mechanism and risks of introduction from importing in-calf cattle needs to be kept under review. The 1266/2007 regulation requires

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cattle to be vaccinated prior to being serviced and this should prevent transplacental transmission. However, given the spread which has occurred over the last few months, there may be cattle serviced in regions which were not under restriction at the time.

Livestock owners and field vets in the UK should note that the re-emerging BTV-8 strain in northern Europe may cause trans-placental transmission and infection of foetuses in cattle and should consider BTV-8 as a possible cause of abortion or malformed calves, in addition to Schmallenberg virus. The weaker pathogenicity of the re-emerging strain of BTV-8 in adult sheep and cattle may result in fewer clinical signs (compared to the 2007 strain), so that infection may be missed.

We would like to remind all livestock owners that they should source animals responsibly by working with their private veterinarians and livestock dealers to make sure animals are correctly vaccinated and protected prior to travel. This means that animals must be correctly vaccinated against BTV-4 and BTV-8 or be naturally immune to both virus serotypes, prior to leaving the Restriction Zone.

We would also like to remind keepers that if they wish to take animals for show purposes to a restriction zone and then return to a free area, they will need to make sure the animals are vaccinated *against both virus serotypes* (BTV-4 and BTV-8) prior to travelling into the Restriction Zone.

We will continue to monitor the current situation in Germany, Belgium and France and will report any further updates from the relevant Authorities.

References

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Zientara, S. et al (2019) INFECTIONS TRANS-PLACENTAIRES PAR LE VIRUS DE LA FCO SEROTYPE 8 CHEZ DES VEAUX https://www.plateforme-esa.fr/sites/default/files/2019-03-08_FCO-France.pdf (in French)

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