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Bluetongue

What is Bluetongue?

Bluetongue is a **virus spread by insects** which affects all ruminants, such as cattle, goats, deer and sheep. It does not affect humans.

Clinical signs can vary by species, although symptoms are generally more severe in sheep, cattle can also show signs of disease (and can act as a reservoir for disease to keep infection circulating).

There are at least **24 varieties** (serotypes) of Bluetongue.

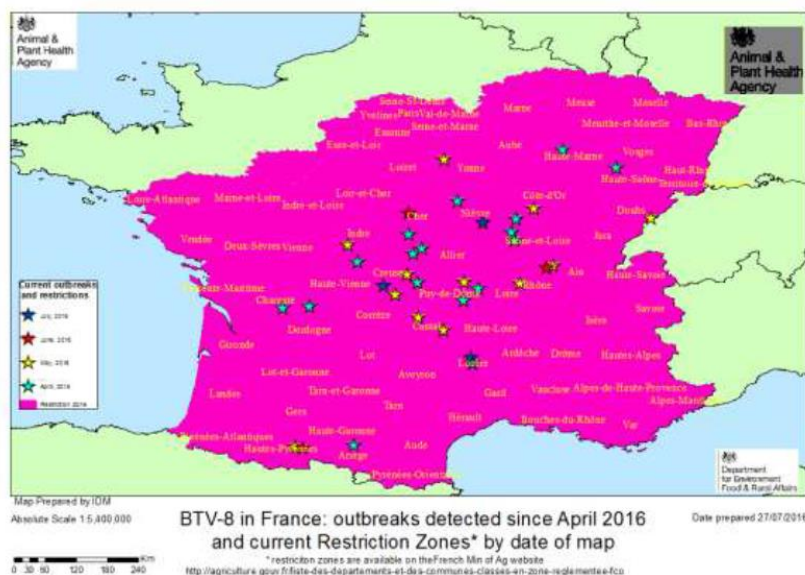
It is a **notifiable disease** therefore any suspicion of disease must legally be reported to the APHA.

There was an outbreak of Bluetongue in the UK in 2008.

Current situation

Currently there are two serotypes circulating within Europe. Bluetongue Virus 4 (BTV-4) has been found in Austria, Slovenia and other Eastern European countries. Bluetongue Virus 8 (BTV-8) has been found in France. There is ongoing surveillance, movement restrictions and trade restrictions in place in these countries.

France has reported 288 outbreaks of BTV-8 with the majority detected by surveillance activity. The pink area on the map is the restricted zone in France.



Defra has analysed the risk to stock in the UK and the country is at risk of an outbreak during the spring or summer months, with an **outbreak in late summer rated the most likely** – the probability of incursion was 5-10% in May, 33-60% in July and is now 80% in September. The most likely route of transmission is infected midges being blown across from France to the south of England. The risk from the movement of imported animals has been deemed low at present but may increase next year when a higher infection pressure leads to more cases.

The voice of British farming

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Vaccine

Farmers can vaccinate against certain serotypes of Bluetongue but there are not vaccines available for all types. There is a vaccine for BTV-8. The vaccination has to be given by injection twice (three weeks apart) in cattle and sheep. It can only be administered when authorised by Defra.

Bluetongue is not a common disease therefore the stocks of vaccines are often low. **There is no vaccine currently available to farmers in the UK but vaccine will be available in mid-July** (manufacturers: MSD (working with CZV) and Zoetis). The availability and price of vaccine have not yet been established.

The success of a vaccination programme is reliant on 80% of farmers engaging in vaccination to their stock before the incursion of disease across central and southern England and Wales. A small area of vaccination (150km) will have only a small impact on the rate of the spread of disease. If disease is already present, vaccination is less effective.

Clinical signs – sheep

Fever; swelling of the head and neck; inflammation and ulceration of the mucous membrane of the mouth, nose and eyelids; lameness; muscle degeneration and leaking of blood or serum from blood vessels into the surrounding tissues; haemorrhages in the skin and other tissues; respiratory signs such as froth in the lungs and an inability to swallow; and a high mortality rate.

Sometimes, although it is rare with BTV8, there may be some discolouration and swelling of the tongue.

Due to clinical signs, deaths of sheep in a flock may reach as high as 70 percent. The condition can lead to a reduction in meat and wool production in the animals that survive (although this is generally not observed with BTV8).

Clinical signs – cattle

Nasal discharge, swelling of head and neck, conjunctivitis, swollen teats, swelling in the mouth, ulceration in the mouth, tiredness, saliva drooling out of mouth and fever. Often milk yield will drop but will slowly recover.

In cattle, the disease cannot be diagnosed on clinical grounds and requires laboratory testing for confirmation.

Other animals: Bluetongue affects all ruminants (cattle, goats, sheep, camels, llamas, giraffes, bison, buffalo, deer, wildebeest and antelope). There is no evidence of Bluetongue infection in any other species.

Transmission

Virus transmission between animals occurs via an **insect vector** (midges of *Culicoides* species), when a midge bites an infected animal and passes the infection to an uninfected naive animal. Transmission of the virus during an outbreak therefore depends on continuing cycles of infection between infected animals and vector insects. Bluetongue cannot be naturally transmitted directly between animals.

Midges are more active when the average daily temperature is above 15°C. The virus becomes less active as the temperature drops and it can overwinter. BTV is predominantly seen in the warmer

months from July to November. Midges can travel up to 1.5-2km per day. Under certain meteorological conditions, especially over large expanses of water, they can travel up to 200km.

Disease prevention

The vector-borne nature of the disease (and distribution of vectors) makes reducing the risk of disease difficult because you cannot guarantee 100% protection from vectors.

Vaccination is the best form of prevention, simply controlling movements is not effective.

Midges can travel long distances and as such keeping stock away from areas with high levels of midge activity (water sources and woodland) will only reduce the risk of disease slightly. Farmers are advised to remain vigilant for Bluetongue if it has been found in the UK. When inspecting stock particular focus should be given to the (mucous linings), lining of the mouth and nose and the coronary band (where the hoof stops and the skin starts).

Suspected or confirmed disease

Defra will put in place a temporary control zone if there is suspicion of disease, the size of the zone will depend on the various factors which affect disease spread. Because midges spread BTV it is likely to depend on temperature, wind speed and wind direction.

Once disease is confirmed a protection (minimum of 100 km) and surveillance zone (minimum of 50km beyond the protection zone) will be put in place. No movements of animals can take place from premises in or out of any zone, although licences may be granted.

For disease control purposes these zones may be put in place even if there is no disease in England.

Surveillance

In June, a serological survey of **bulk milk samples** from about 200 randomly picked dairy herds across the Southeast and East of England were tested for antibodies to BTV. The aim was to ascertain the background level of BTV-seropositive cattle and whether this would be a useful as an early warning system for BTV-8 incursion. [Read the latest risk assessment from Defra for the results.](#)

Midge traps across the south of England ensure there is regular surveillance carried out in the UK. This is increased when neighbouring countries have the disease. All stock coming into the country from restricted zones has and will continue to be tested for BTV-8.

There is ongoing surveillance in other countries, including France and the Netherlands, which is shared regularly. The UK analyses this to help assess the risk to UK livestock.

Trade

If Bluetongue is found in the UK there will be movement and export restrictions put in place. However the restrictions will depend on the location of the livestock, the zone which they are in, the serotype and whether a vaccine has been authorised for use.

To become declared as BTV-free, surveillance tests have to run clear for two years before this will be granted.