

WHAT ARE THE TRUE RISKS TO YOUR FLOCK OR HERD

Bluetongue virus (BTV) is an infectious, non-contagious, vector-borne viral disease. It affects wild and domestic ruminants such as sheep, goats, cattle, deer and camelids. The first case of BTV-3 in the UK was confirmed in England on November 10, 2023. The bluetongue virus serotype 3 (BTV-3) outbreak in the Netherlands in 2023 caused severe clinical signs in ruminants. The clinical signs observed in affected animals during the 2023 BTV-3 outbreak seem to be more severe than those observed during the BTV-8 outbreak between 2006 and 2008.

- ✓ The virus is transmitted by **biting midges**.
- ✓ The current BTV outbreak in England and Wales is caused by **BTV-3**.
- ✓ In highly susceptible sheep, **morbidity can be as high as 100%**. Mortality averages are **2–30%** but can be as high as **70%**.

TRANSMISSION

Vector-borne transmission:

- The main mode of transmission is through the bite of infected *Culicoides* midges.

Midge activity:

- Midges are most active during warmer months (April to November), which aligns with the period when bluetongue outbreaks are most common.

Animal movement:

- Movement of infected animals, including ruminants and camelids, and their germinal products (semen, ova, embryos) can spread the virus.

Mother-to-offspring transmission:

- BTV-3 can also be transmitted from a pregnant animal to its offspring

THE SPREAD:

Requires a vector

- Direct animal to animal spread not possible
- Main vector is *Culicoides* midge (*C. obsoletus* in UK)
- Requires constant temperature >12 deg C to allow transmission
- Midges advance 2 – 8km per day
- Wind plumes can accelerate spread in to new areas

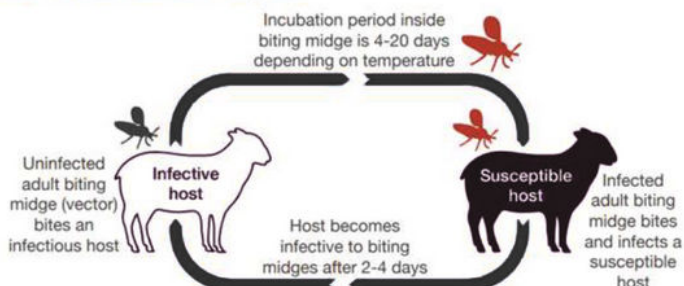
Biosecurity

- Moving infected animals can move virus to new areas
- Moving infected midges can move virus to new areas
- Needles – blood contamination – if injecting groups of animals for any reason during bluetongue season, change needles frequently.
- Germplasm – definitely in semen, probably not in ova and embryos



3 MONTH SPREAD ACROSS GERMANY

BTV transmission cycle

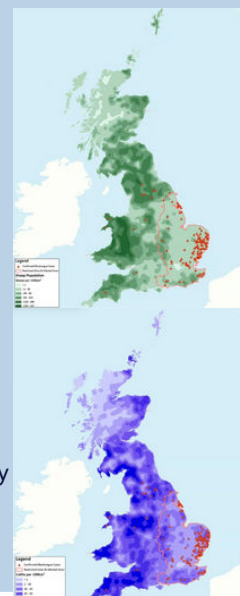


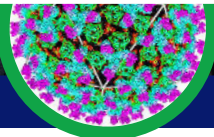
SEASONALITY:

- Seasonal disease due to seasonality of midge population
- It is therefore quite predictable and we are able to predict what is very likely to happen
- Vaccination will be most effective if given before the vector high period- you need 3 weeks from (last dose) vaccination to be protected
- Classical BTV generally comes in 3 – 4 year waves
- Wise to vaccinate during waves to reduce economic impact

WHY ARE WE SEEING DIFFERENT PRESENTATIONS OF THIS ACROSS THE UK:

- Not linked to virus itself – structure of BTV-3 virus has not significantly altered from Europe to UK
- Observation of more severe clinical signs in individuals as infection rate within a herd and within an area increases
- Possibly linked to viral load in the local midge population and therefore linked to local livestock density
- Initial outbreak in the Netherlands was in an area of high livestock density, entry into the UK was in a very low livestock dense area – this will quickly change
- Message from abroad – **do not wait** for mammalian carriers to amplify the severity of an outbreak, **vaccinate promptly!**





CLINICAL SIGNS:

SHEEP

- Death
- Fever
- Breathing Problems
- Discharge from eyes/ nose and mouth
- Swelling of lips/ tongues or coronary band
- Red Skin
- Abortions, foetal abnormalities and poor conception rates

COWS- GENERALLY:

- Abortions, foetal abnormalities and poor conception rates- dummy calves?
- Nasal Discharge
- Fever and Lethargy
- Teat Defects
- Redness around hooves and lameness
- Milk Drop



COWS- DAIRY

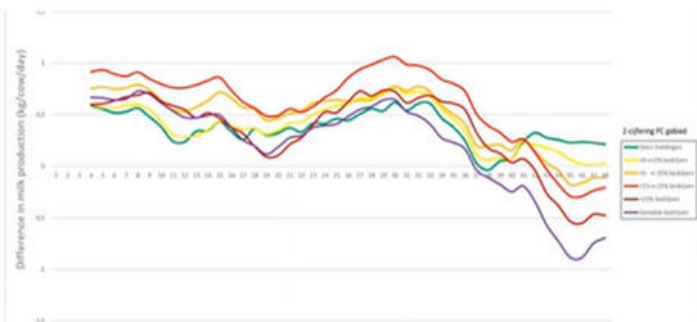
- Plus significant milk drop for up to 9 weeks (1kg per cow per day)
- In the Netherlands in 2023, there was a significant impact on the dairy sector, **1.15kg/cow/day drop in milk production**
- 100 cow herd ~8,000kg of milk during an outbreak period
- **Increase in high and bulk somatic cell counts**

COWS- SUCKLER

- Production is KEY- with or without clinical signs
- SUMMER- clinical signs
- AUTUMN- fertility issues
- WINTER- abortions and empty cows
- SPRING- empty cows, abortions, stillborn, deformities and poor viability, Blindness / Neurological



Difference in milk production per week of the year: different groups of herds



VACCINE:

Bultavo 3 most widely used (cost £2.50 + vat per dose)

- Inactivated adjuvanted vaccine
- Vaccination allowed under general licence (not NI currently)
- Records of sale and use must be reported to APHA by vet practice and owner
- Highly effective

Licensed to

SHEEP

- Active immunisation to reduce viraemia and prevent clinical signs and mortality caused by BTV3
- Single 1ml S/C dose 3 weeks from 1 month of age
- Lambs of vaccinated dams should not be vaccinated until 3 months

CATTLE

- Active immunisation against BTV3
- 2 x 1ml I/M doses administered 3 weeks apart
- Calves of vaccinated dams should not be vaccinated until 2.5 months

>15 million doses sold in Europe since May 2024, zero adverse reaction reports or reports of deaths in vaccinated animals

TREATMENT OPTIONS:

- NSAIDs injection – **CAN BE GIVEN ONCE ONLY**
- Supportive fluid therapy
- B vitamins
- Antibiotics for secondary infections Steroids?
- Antihistamines tried in Europe but they found that actually it increased the death rate
- Long term complications- barren cattle, dummy calves (see clinical signs)
- Prompt euthanasia must be considered for the most severely infected animals on welfare grounds
- Only known treatment is to **PREVENT with Vaccination**

