

10 April 2024

Bluetongue virus (BTV)

Information for private veterinarians in NSW

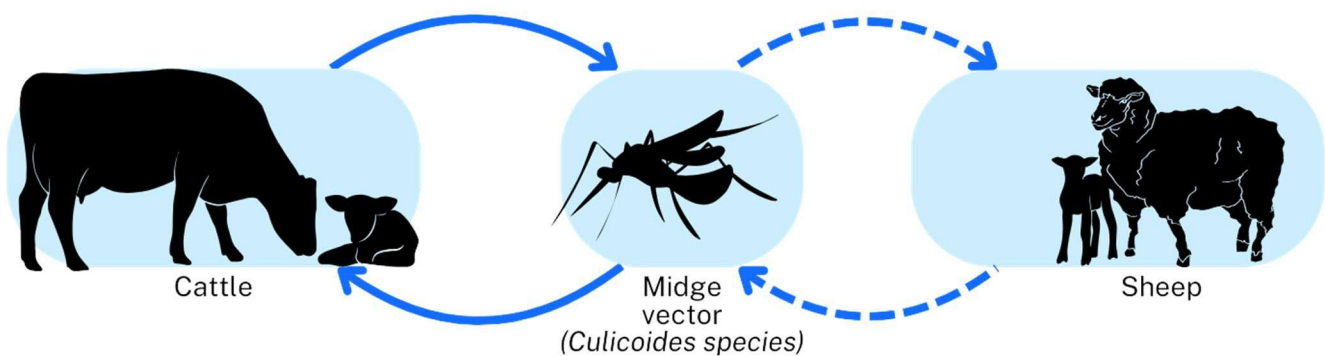
Diagnosis and management of endemic bluetongue strains in NSW.

BTV background

Clinical bluetongue virus (BTV) has been detected on sheep properties within the NSW BTV transmission zone in February and March 2024. In May 2023, clinical BTV disease was diagnosed for the first time in NSW livestock on two sheep properties in the BTV transmission zone.

The 2024 detections of BTV have been the BTV-1 strain, which is known to occur within the BTV transmission zone. The National Arbovirus Monitoring Program (NAM) interactive BTV transmission zone map is available online: <https://namp.animalhealthaustralia.com.au/public.php>.

Bluetongue is an insect-borne viral disease of ruminants that does not affect people. BTV is spread by biting insect vectors, particularly *Culicoides* midges. All ruminant species, including cattle, sheep, goats and camelids are susceptible. However, bluetongue is primarily a sheep disease. Infection in cattle is usually not detectable. The severity of different strains of bluetongue varies significantly.



BTV1 disease transmission pathway

Clinical signs

The mortality rate is variable in sheep and generally ranges from zero to 30% depending on the virus strain and genotype of sheep. Goats are affected less commonly and less severely than sheep.

Clinical signs may range from acute to mild and typically involve:

- variable, fluctuating fever,
- lethargy,
- hyperaemia of oral and nasal mucosae,
- excess salivation,
- nasal discharge,
- lips and tongue may become swollen, and the oedema may extend over the face and intermandibular space,
- respiratory signs including difficulty breathing,
- haemorrhages occur on oral and conjunctival mucosae,
- ulcers develop on the gums, cheek, and tongue 5 to 8 days after the onset of fever,
- feet lesions may appear towards the end of the febrile period,
 - there is reddening and petechial haemorrhages on the coronary band,
 - the associated pain causes the animals to stand with arched backs and be reluctant to move.

The highest concentrations of virus in the blood usually occur during the early stage of disease before antibodies develop but virus can be reliably detected for at least 7 to 10 days after the onset of disease.



BTV1 affected sheep showing hyperaemia or reddening on oral mucosae with ulcers developing on the gums.



BTV1 affected sheep showing muzzle lesions and scabs, with secondary to swelling of the nose and lips, and lower jaw.



BTV affected sheep showing oedema over the face and submandibular space under the jaw.

Reporting

Bluetongue in sheep, goats and cattle is a notifiable disease in NSW. This means you have a legal duty to report all suspect BTV animals in your care. This is detailed in the *Biosecurity Act 2015* (Sections 30 and 38) and the *Biosecurity Regulation 2019* (clause 7).

This duty applies to an owner, occupier, or person in charge, care, control, or custody of a premises (such as a property), or a carrier or thing (such as an animal, animal product, vehicle, or equipment) to which the notifiable matter or biosecurity event relates.

This duty also applies to a person consulting in their professional capacity, such as a veterinarian. There is no requirement to report if you know the matter has already been reported.

If you see signs of disease consistent with BTV or other unexplained signs of disease or sudden death in your sheep, immediately call the **Emergency Animal Disease Hotline, 1800 675 888** or your Local Lands Services (LLS) District Veterinarian, 1300 295 799.

Sampling for BTV

Sampling Plan - required samples for current investigation:

Affected animals in mob	Blood samples (plain and EDTA) should be collected from 12 affected sheep (or all sheep if less than 12 affected). If an animal is available for post-mortem, fresh tissue samples can be submitted.
Unaffected cohorts	Collect blood (EDTA and plain tubes) from 12 randomly selected unaffected sheep less than 12 months old. Collect blood from 12 randomly selected unaffected sheep >12 months old (if possible, for the mob / farm size)

While the virology team can work with fresh tissues from post-mortem examination, it is also important to collect blood from affected and unaffected animals (as per Surveillance plan) as virus levels are higher in the blood and easier to work with. Blood collection takes time, but you may be able to request animals be yarded before the property visit.

To allow a definitive laboratory diagnosis and support a timely differential diagnosis, obtain a **full range** of samples.

Collection container	Collect from live animals	Collect from dead animals
EDTA tube (purple top) – full	One full 10 ml vial of blood (refer to the above sampling plan for number of samples to collect)	

Plain tube (red or grey/red speckled top) 10 ml of blood (refer to the above sampling plan for number of samples to collect)

Separate sterile collection containers (no media) for fresh samples (kept chilled at 4°C, not frozen)

Spleen and lymph nodes from all post-mortem cases

Large collection container with 10% neutral buffered formalin (kept chilled at 4°C, not frozen)

Cardiac and skeletal muscle and other tissues as indicated by gross examination.

NOTE: Separate needles should be used for each animal to avoid cross contamination of blood samples.

- Fees for tests undertaken to confirm or exclude a diagnosis of **Bluetongue** are paid by NSW Department of Primary Industries (NSW DPI).
- Fees for testing to establish an alternate diagnosis are not paid by NSW DPI.

Sample handling and transportation advice

- Completely fill EDTA tubes then mix well by inversion a few times (if not filled the concentration of EDTA can be too high and affect testing)
- Leave clotted bloods at room temp for a few hours
- Place all samples in a refrigerator (but DO NOT freeze)

If sampled late in the week, they will be fine chilled for 4-5 days. When sending to the lab, keep chilled but not in direct contact with a chilling block (put something between tubes and blocks - e.g., wrap tubes in paper or use some cardboard)

Differential Diagnoses

The clinical signs of BTV are similar to these sheep diseases:

- scabby mouth (contagious pustular dermatitis)
- acute photosensitisation
- lameness due to footrot, foot abscess and other foot conditions
- acute haemonchosis (with depression and submandibular oedema)
- facial eczema
- pneumonia
- lant poisoning
- salmonellosis
- sheep pox

- foot-and-mouth disease
 - peste des petits ruminants.
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Actions where there is suspected BTV on a property

- Complete an animal biosecurity field investigation questionnaire – This can be found at: <https://www.dpi.nsw.gov.au/biosecurity/animal/info-vets/bluetongue-virus>
 - If clinical BTV is suspected, direct the owner/manager of the animals not to move livestock or livestock products (semen, embryos, wool) until further notice. Contact your regional District Veterinarian for further assistance with case management.
 - Advise the Animal and Plant Health Laboratory (APHL) at EMAI / EAD Hotline and sheep.labresults@dpi.nsw.gov.au of suspect case samples being sent to APHL at EMAI.
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Actions where BTV has been confirmed on a property

Once BTV is confirmed, NSW DPI will advise next steps including issuing an Individual Biosecurity Direction and if any further serosurveillance is required.

Advice to Owners:

As a precaution, the movements of sheep from properties where BTV has been confirmed are restricted until the end of the vector season. Depending on your property location, this may coincide with the first frosts of the season or when NAMP testing for the season concludes and the *Culicoides* vector is no longer present. This is to ensure no sheep or sheep products leave the BTV transmission zone.

Some movements may still be allowed on a case-by-case basis as determined by NSW DPI. For example, cases where sheep go direct to slaughter or low-risk movements within the existing BTV zone may be allowed. Movement of sheep will be allowed after the end of the 2024 vector season when *Culicoides* midges are no longer active.

Your LLS District Vet or NSW DPI will work with you to protect your farm and the region's livestock industry. LLS and NSW DPI can work with your private veterinarian, if desired.

No ruminants or their products will be eligible for export from confirmed infected properties during the transmission period, including cattle, goats, sheep and wool, due to the requirements of importing countries.

There is no treatment for the virus. Supportive therapy may assist the animals during recovery. Please discuss this with your veterinarian. Protection from insect bites may be helpful but may not be practical. Separating sheep and cattle may assist in reducing midge attack on the sheep.

Communications and requests for information

Communication of clinical Bluetongue disease holds some risk to our trading status. Communications must be managed delicately to minimise trade impacts to Australian products.

If you receive a request for information from media or members of the public, please refer them to NSW DPI Animal Biosecurity team– animal.biosecurity@dpi.nsw.gov.au.

Useful links

NSW Department of Primary Industries – Bluetongue virus

<https://www.dpi.nsw.gov.au/biosecurity/animal/info-vets/bluetongue-virus>

NSW Animal and Plant Health Laboratories (APHL) – Bluetongue: <https://www.dpi.nsw.gov.au/about-us/services/laboratory-services/veterinary/bluetongue>

National Arbovirus Monitoring Program (NAMP) Bluetongue Virus Zone Map – Animal Health Australia: <https://namp.animalhealthaustralia.com.au/public.php>

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