

MONITORING FOR ARBOVIRUSES IN WA

OPERATIONS MANUAL

2016/17



ETHANOL – with new posting method!

NATIONAL ARBOVIRUS MONITORING PROGRAM

Program outline

Monitoring the national distribution of economically important insect-borne viruses (arboviruses) of livestock and their vectors is carried out under a jointly-funded industry and government program called NAMP (National Arbovirus Monitoring Program). Additional information can be found at the Animal Health website: www.aahc.com.au (search for NAMP).

Important arboviral diseases of livestock include:

- **Bluetongue** – a serious disease of sheep causing swelling of the face and mouth, fever, lameness and for animals that survive, a prolonged recovery. In cattle the virus only causes mild sub-clinical disease. The disease has not been recorded in sheep in WA.
- **Akabane** – infection during pregnancy causes congenital defects in calves and lambs. Rarely seen in the Kimberley since the virus is widespread, and heifers are likely to be immune before their first pregnancy.
- **Ephemeral fever** – often called *3 day sickness*, since animals generally recover after 3-4 days of fever, inappetence, salivation, nasal discharge and lameness. May be fairly mild disease, but sometimes bulls are more severely affected.

One major insect vector that transmits these arboviruses belongs to the genus *Culicoides* sp., which are biting midges. This species of interest feed on cattle and sheep (ie. a source of blood) and breed in cattle dung.

The three scientific objectives of NAMP are:

1. **Trade support for exports to bluetongue-sensitive markets** - monitoring provides data on the distribution of arboviruses, which is used to certify that animals are sourced from virus-free areas. Bluetongue-sensitive markets include Israel, China and Mexico.
2. **Early warning of bluetongue** – surveillance aims to detect new incursions and provide early warning of any southern spread of potentially virulent strains into major sheep producing areas.
3. **Risk management** – by providing direct advice on seasonal activity to assist producers in managing the risk of arboviral infection to livestock.

There are two components to the program: vector and virus monitoring. As a general rule each site combines monitoring for viruses in sentinel cattle with monitoring for insect vectors by light trapping. At sentinel sites, 10-15 young cattle previously unexposed to arboviral infection are blood tested regularly to monitor for infection. Battery operated light traps are also set during the dark phase of the moon (new moon) to collect biting midges that can spread viruses to livestock.

VECTOR TRAP

Instructions

The *Culicoides* trap operates automatically at night and requires 3 D-cell batteries to power the internal fan and light. *Culicoides* (midges) and other nocturnal insects are attracted to the light, then forced into the collection bottle by the fan. The trap should be set around the dark phase of the moon (new moon), to reduce the effect of competing light. The trap is purpose-built, expensive and may take months to replace – so please handle with care!

Please set the trap according to the trapping dates on your letter. Sufficient bottles, batteries and postage have been supplied, and additional trap supplies can be forwarded later on in the season should anything have been lost or damaged in transit.

INSTRUCTIONS

- Place three fresh batteries in the trap each time
- Replace lid of battery box and test trap by covering the light sensor with your hand (green light and fan should switch on, and stop when you take your hand away)
- Hang the trap:
 - about 2m from the ground
 - with a 360° field of view
 - where cattle are constantly present/nearby
 - no competition from other lights
- Attach ethanol bottle to bottom of trap (like the picture on the front of this manual). In most cases, pre-filled bottles will be supplied. However, if you have been sent empty bottles and lots of 30ml specimen jars, **please pour six (6) jars of ethanol into your NAMP bottle**
- Leave the trap in the field for two (2) consecutive nights
- Collect the bottle after two (2) nights
- Bring the trap in and remove batteries to preserve its condition
- Label the bottle (your name, location and date)
- Fill in the Datasheet provided
- Samples collected should be handled with care and posted as soon as possible
- If delayed, please keep sample in fridge and post at the next available opportunity

NEW POSTING METHOD – revised (again!) April 2016

- 1 Pour a small amount of clean ethanol from your spare bottle into a yellow-lidded specimen pot –up to the broad yellow line on the sticker (only about 15ml).



- 2 Take one small stocking, place over mouth of specimen bottle and pour out all insects and ethanol.



- 3 Tie a loose knot in the stocking, and place in the yellow-lidded specimen pot.



- 4 Enter site and collection dates onto the label provided and attach label to yellow topped specimen pot.



- 5 Seal specimen pot with plastic tape, put in zip-locked bag and add paper towel to the bag (just in case the pot leaks). Double bag samples to ensure no leakages in post.



- 6 Place double-bagged specimen pot, empty collection bottle and datasheet in the reply paid envelope supplied.

VECTOR TRAP

Troubleshooting hints

- **Nothing happens when I cover the sensor to test it** – Using a finger or thumb may still allow too much light through to the sensor, cover with something more solid.
- **Light and fan do not work** - Check polarity of batteries.
- **Fan works and light does not** – Screw light in tighter and pinch lamp holder gently to improve contact.
- **Light works and fan does not** - Check that propeller is not touching wall of the cylinder. Call us and we will replace the trap.
- **Trap working and no insects caught** – Check trap for spider webs. If it has been particularly cold or windy then numbers will be low, this should be noted on the datasheet.
- **Ethanol low in collection bottle** - Wind and heat can quickly evaporate ethanol. Use ethanol from the extra bottle to top-up the level if needed.
- **Water in trap after rain** – Follow the instructions for postage as soon as possible, as water will ruin the specimens.



CLAIM FORM FOR VECTOR LIGHT TRAP 2016/17

You are entitled to claim a payment for the samples you collect on behalf of the National Arbovirus Monitoring Program.

This amount changes from year to year so, when it comes to the end of the financial year, please contact Marion Seymour (NAMP Co-ordinator) for an updated claim for payment form:

Marion Seymour
NAMP Co-ordinator
Department of Agriculture and Food
PO Box 16
Moora WA 6510
Email: marion.seymour@agric.wa.gov.au

FOR FURTHER INFORMATION

NAMP activities in WA

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National program

Animal Health Australia

Website: <http://www.aahc.com.au> – under 'Programs & Projects' heading, or go directly to:

<http://www.animalhealthaustralia.com.au/programs/disease-surveillance/national-arbovirus-monitoring-program/>