



Summary Fact Sheets for Mosquito Traps used in the Mosquito Surveillance Programme in New Zealand

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This is a quick guide to the recommended mosquito traps that are used in surveillance in New Zealand. Each Point of Entry should have at least one of each of the CO₂-Baited Light Trap, Tyre Trap, and a BG Sentinel Trap and/or GAT (Gravid *Aedes* Trap). Each trap should have a sign attached stating what it is, why it is there and not to touch it, along with contact details.

CO₂-Baited Light Trap

- Collects: Adults
- For nocturnal host seeking females, and for males looking for females
- Attractants are:
 - CO₂ to simulate host breathing (long distance)
 - Light (short distance)
 - Octenol
- Attracts *Anopheles* species, *Culex* species (inc. *Cx annulirostris*, *Cx quinquefasciatus*, *Cx pervigilans*), *Ae camptorhynchus*
- The CO₂ outlet should be sitting on the top of the hat to allow the CO₂ to cascade and dissipate slowly
- Trap is best suspended about 1.2 – 1.5m about the ground in a sheltered position that is still visible, and where it is not going to be tampered with
- It should be placed in an area where there are no other light sources or large areas of CO₂ production, such as cattle, to compete, and it should be placed near vegetation and out of exposed conditions
- Is best when set up close to a high producing breeding site – can have a tyre trap placed by it if there is no breeding site nearby
- Can be used with or without octenol depending on what species that is being targeted
- Can be set up to be used with either a battery or a plug
- Will often have a lot of by-catch as many insect species are attracted to light



BG Sentinel Trap

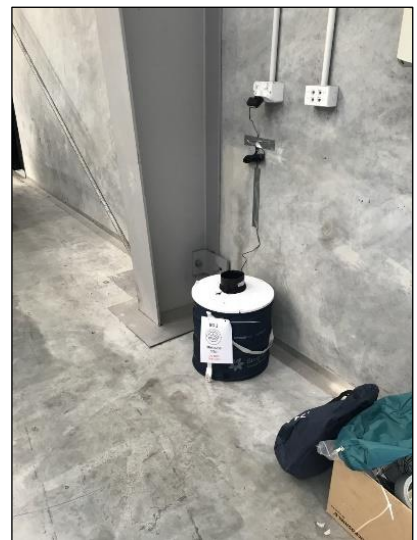
- Collects: Adults
- For diurnal host seeking females, and males looking for females
- Attractants are:
 - Convection currents that mimic a human body
 - Contrasting colours
 - BG Lure that emits a scent that mimics odours that the human body releases
 - Can have CO₂ added to change the target species
- Specifically designed to attract *Aedes aegypti* and *Aedes albopictus*, but will also collect *Culex quinquefasciatus*, *Cx pervigilans*, *Aedes notoscriptus*, and *Ae antipodeus* in routine surveillance in New Zealand. Different exotic species are attracted depending if CO₂ is added
 - Target species without CO₂: *Aedes aegypti*, *Aedes polynesiensis*, *Culex quinquefasciatus*, *Culex pipiens*
 - With CO₂: *Aedes albopictus*, *Aedes* spp., *Anopheles* spp. and *Coquillettidia* spp. and also Simuliidae, Ceratopogonidae
- Should be placed in a sheltered location on the ground or up to 20cm above the ground, ensuring that it is visible and has at least 50cm on top of the trap that is free of obstacles
- Can be set up to be used with a battery or a plug
- Two versions are currently in use, the BG Sentinel 1 and BG Sentinel 2 though the BG 2 is more common in the field



BG 1



BG 2



BG 2

GAT (Gravid Aedes Trap)

- Collects: Adults
- Passive trap (no need for power) to attract container breeding gravid females
- Attractants:
 - Aged water
 - Dark rim
- Designed to specifically attract *Aedes* mosquitoes, especially *Aedes aegypti* and *Aedes albopictus*. Will also collect *Aedes notoscriptus* and *Culex quinquefasciatus* and *Culex pervigilans*. Has been proven to be successful in capturing large numbers of *Aedes*, *Anopheles*, *Culex* and *Verrallina* mosquitoes without the use of power
- Insecticide should be applied to the inside of the translucent chamber to prevent adults from escaping and s-methoprene pellets should be added to the water in case larvae are present
- These rely upon luring mosquitoes into a translucent “passive” trap by providing an attractive site to lay their eggs
- Can be very useful in an environment that may not be suitable for a BG Trap



Tyre Trap

- Collects: Larvae
- Attracts gravid females seeking a place to lay their eggs, and collects the larvae produced
- Attractants are:
 - At least one litre of clean aged water, with the water quality attracting different species
 - Tyres are a preferred breeding spot for many container breeders so offer an attractive option for a place to lay their eggs
- Attractive to container breeding species including *Aedes aegypti*, *Aedes albopictus*, *Culex quinquefasciatus* and *Cx pervigilans*, *Aedes notoscriptus*, various other *Aedes* species and *Culex* species
- Needs to have s-methoprene added to prevent larvae developing into adults as tyres are able to produce many mosquitoes
- Aged water can be made by adding a handful of grass or 1 rabbit pellet to 10 litres of water and letting it sit for a week before using it
- Small aviation tyres, go cart tyres, and car tyres are the best
- Can be deployed indoors or outdoors
- Should be placed in a sheltered, shady areas on the ground near where human activity occurs. These should be near vegetation and protected from the rain and disturbance by animals
- Tyre traps must also show the HAZCHEM sign indicating that it contains a hazardous substance that is hazardous to the aquatic environment and the words “The site contains a hazardous substance that is hazardous to the aquatic environment”.

