

# Area-wide Management of the Asian Tiger Mosquito *Aedes albopictus* BG-Sentinel Trapping Recommendations<sup>1</sup>



## Purpose

Based on available research at the time the Area-wide Management of the Asian Tiger Mosquito (AW-ATM) Project chose to use the BioGents Sentinel (BGS) trap to monitor adult mosquito populations in our area. We had great success using the BGS Trap. They were excellent at capturing *Ae. albopictus* and caught relatively little else. We did, however, face challenges with the craftsmanship of the traps and with attaining the traps. The information below details the recommendations for trapping of adult *Aedes albopictus*, using the BGS trap, based on field experiences and research.

Figure 1 (at end of document) is a diagram of the BGS trap taken from the Manual to reference particular trap parts as mentioned.

The current BGS Manual can be downloaded from the BioGents website at:  
[http://www.bg-sentinel.com/downloads/BG-Sentinel\\_Manual.pdf](http://www.bg-sentinel.com/downloads/BG-Sentinel_Manual.pdf)

## Coping Mechanisms for Use of the BG-Sentinel (BGS) Trap

### Order in Advance

The AW-ATM project has faced varying wait times and backorders for BGS traps and their parts ranging from months to weeks. Plan for delays and order traps well ahead of the time you will need to put them to use. It is recommended that parts (cones, gauze coverings, etc.) be kept in stock as they also have often been delayed in shipping.

### Trap Preparation for Use

Additionally, we found numerous problems with traps upon receipt and repairs were needed to traps right out of the box to make them operational. We found the wiring to be substandard and battery attachment clips to be faulty resulting in trap failures, one fire, and one worker injury. We also found fans blowing in the wrong direction blowing mosquitoes out of the net. Shortly after beginning use the zippers on the storage bags began to fail and curiously perfect round tears in the fabric began to appear. This caused trap parts to fall out the bags and in some cases parts were lost. In year 2, the elastic in the white gauze covers began to fail and would blow off during trap use. Fans in

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<sup>1</sup> Mention of trade names or commercial products in this publication is solely for the purpose of providing specific information and does not imply recommendation or endorsement by the USDA or other involved parties.

numerous traps have also failed during the course of the Project. We also found the BG Lures in 2009 to be extra 'juicy' and much of the attractant liquid leaked out of the individual lure pouches and into the bag they were shipped in. This was cause for concern, as dried out lures lose their potency. **Inspect your traps and lures thoroughly upon arrival.** Ensure that wiring does not detach easily, all parts are included and fit, and that all fans are blowing in the correct direction. The following list details the actions taken by the AW-ATM project to remedy each of the problems listed above.

- **Wiring:** All traps were rewired (22 gauge) before use to ensure trap success.
- **Clips:** All battery clips were replaced. It is recommended that clips be rust proof or resistant.
- **Storage bags:** Bags were replaced before use. Both zipper tote bags and nylon laundry bags of appropriate sized were utilized with success. These were purchased in bulk from internet based companies.
- **White Gauze Cover:** This is applicable to only the original design of the BGS trap and not the current version sold. As elastic failed it was replaced with 1 cm wide elastic. The failed elastic was pulled out and new elastic was fed through with a safety pin. (Like re-stringing a sweatshirt hood) The newer version of the BGS traps comes with a gauze cover that does not make elastic replacement possible without the use of a sewing machine and a lot of time. It would likely be more cost effect to purchase new covings which are available.
- **Fans:** Fans have been replaced as needed. The BGS trap fan is basically a computer cooling fan. While the stock fan could be ordered from the manufacturer or distributor, similar replacements were purchased from Radio Shack and internet based companies. The original version of the trap used elastic at the bottom of the inner suction tube to hold the fan in place. This elastic also went slack eventually and all traps fans were reinforced with wire ties to hold them in place regardless of whether the elastic had yet to fail.
- **Lure:** The BGS lure is a mesh tube held together at each end with tape. Due to the juicy nature of the lure this tape tends to slip off. We simply ensure all the original contents are in the mesh and secure the ends with wire ties. Lures need to be kept sealed in zipper bags when not in use to help extend their useful life throughout the mosquito season. New lures do some in zipper bags.
- **Parts:** Because we rely so heavily on the BGS traps we keep a stockpile of parts which includes: gauze coverings, catch pipes, fans, wire, battery clips.

### **Placement of BGS Traps Across an Area**

Because our work was oriented for research, we realize that the number and configuration of traps across an area used in the project will not reflect that which is feasible to all operations . A surveillance SOP will thus largely vary based on the availability of resources in each program and purpose of surveillance.

### **For Measuring Treatment Efficacy**

Before and After Trapping for Adulticide: Place a number of BGS traps at highly productive locations two weeks prior to treatment and two weeks post treatment. (BGS trap quantity will be based on what you have available and can set in one day.)

## Placement of BGS Traps at a Single Trap Location

BGS Sentinel traps should be placed:

- In shaded areas, not in direct sunlight
- Near resting areas
- Out of areas subject to winds (They can blow over somewhat easily. In the event of a windy day we put the batteries inside the trap casing.)
- Not in heavy or constant rains (ATM are still caught in light drizzle, but no rain is best.)

\*We did not place traps directly next to larval habitats as suggested in the BGS Trap Manual as our goal was not to use the trap as a control measure but a surveillance tool. The manual also suggests allowing at least a meter (~3.5') of space above the trap to allow for the scent plume to disseminate; however, in some locations the only shade available left the trap under a tree or bush. This did not seem to affect catch.

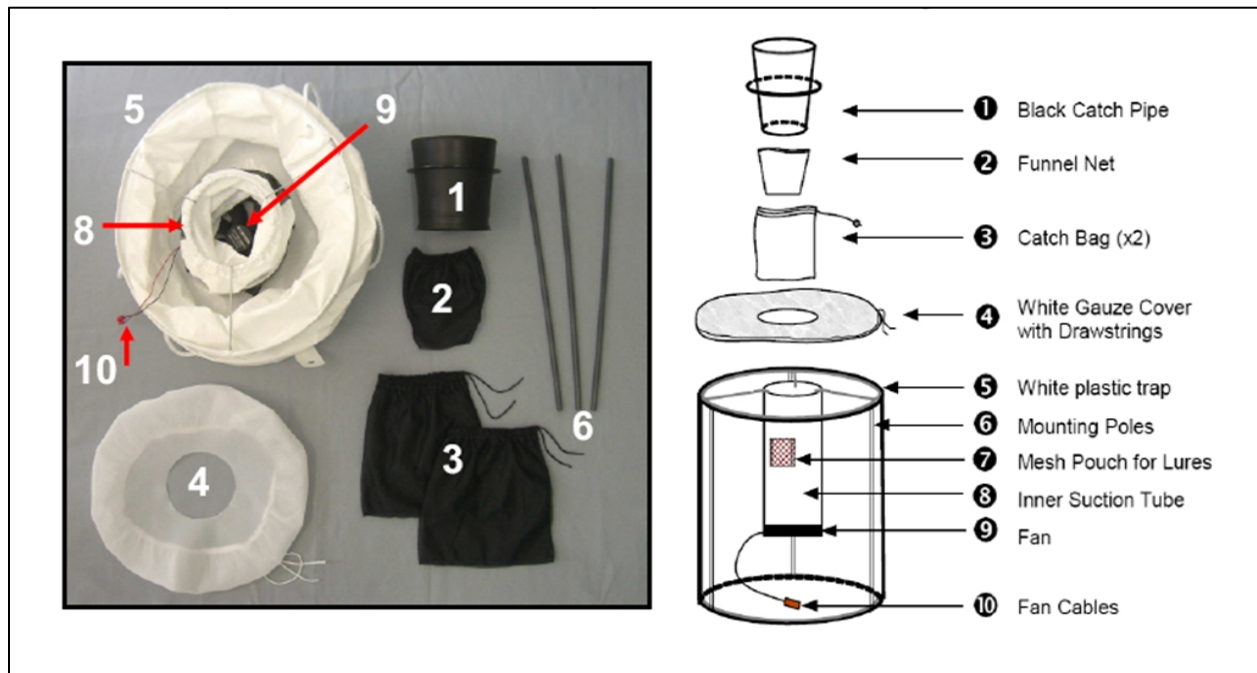


Figure 1. BGS Trap specifications from the BioGents Sentinel Trap Manual