

Biogents
Mosquito Control

Mosquito Trap

BG - GAT

Instruction manual

EN

The BG-GAT trap was developed by Dr. A.E. Eiras from the Universidade Federal de Minas Gerais, Belo Horizonte, Brazil and Prof. Scott Ritchie from the James Cook University, Cairns, Queensland 4870, Australia.

Publications:

Eiras, A.E., Buhagiar, T.S., and Ritchie, S.A. (2014): Development of the Gravid *Aedes* Trap for the capture of adult female container-exploiting mosquitoes (Diptera: Culicidae). *J. Med. Entomol.* 51(1): 200-209.

Ritchie, S.A., Buhagiar, T.S., Townsend, M., Hoffmann, A., Van den Hurk, A.F., McMahon, J., and Eiras, A.E. (2014): Field validation of the Gravid *Aedes* Trap (GAT) for collection of *Aedes aegypti* (Diptera: Culicidae). *J. Med. Entomol.* 51(1): 210-219.

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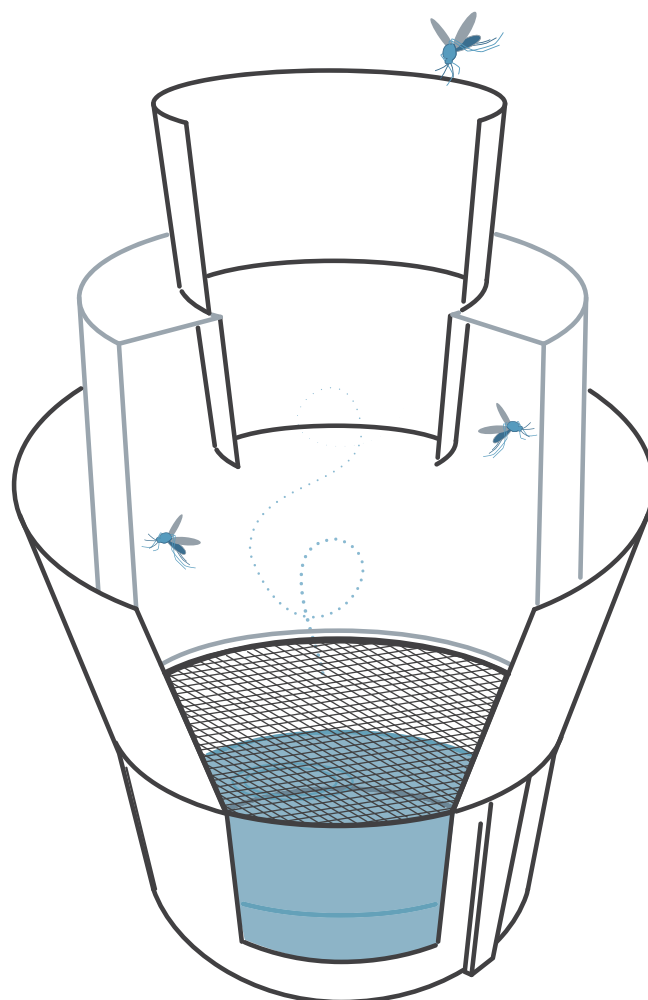
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Function

Female mosquitoes are attracted by water and ovipositioning cues and enter the transparent chamber through the funnel. Once in the chamber mosquitoes try to escape through the translucent windows where they are exposed to the insecticide and die. The black mesh net provides a barrier between mosquitoes and the infused water as well as retains dead mosquitoes without damaging them. There are two possibilities of killing the mosquitoes:

1) A killing agent (e.g., residual surface spray insecticide) can be applied to the inner wall of the translucent chamber to kill mosquitoes through contact (for example Mortein Outdoor Barrier Surface Spray, imiprothrin 0.3 g/kg and 0.6 g/kg deltamethrin Reckitt Benschkiser Pty. Ltd.)

2) In addition to the black mesh net, LLINs (long-lasting insecticide-treated nets) can be placed inside the transparent chamber to kill mosquitoes through contact. A round LLIN placed loosely on the mesh screen on the bottom of the chamber and a rectangular net wrapped around the black entrance funnel provide good results.



Cross-sectional view

Product components

1. Mounting ring + net

2. Funnel

3. Transparent chamber

4. Black bucket

5. Optional: blue LLINs
(treated with Alphacypermethrin)



Assembling the trap

Please note:

The smell of the new plastic of the traps might have repellent effects on the mosquitoes. Therefore, we recommend to store the traps with some water outside for two weeks before using them in the field to get rid of the smell.

1. Unpack all parts and check if everything is there.
2. Fill the black bucket with water up to the overflow (about 3 liters). Insert hay infusion (for example 10 g of dry hay* [F1]), other organic materials (for example rabbit chow or 10 mg of alfalfa pellets per liter) as ovipositioning attractants. If you want to add additional lures like the BG-Lure, pop out the white Biogents disc from the hole in the transparent chamber [F2] and place the BG-Lure cartridge into the hole. **If you don't use the BG-Lure anymore, make sure that the hole is plugged so that the mosquitoes cannot escape.**

Mosquitoes will lay eggs through the mesh. Therefore it is a good idea to prevent larvae development e.g. with a small piece of LLIN, Bti or an insect growth regulator such as methoprene pellets in the water.

3. Place the black net on the open end of the transparent chamber to ensure that the mosquitoes won't reach the water [F3].
4. Fix the black net to the transparent chamber with the mounting ring. Start by laying the ring over the net on one side [F4]. While holding this side fixed, press the opposite side of the transparent chamber together to attach the rest of the ring [F5]. Then press the ring equally on all sides down over the chamber [F6] to lock it tightly in place [F7].



F1



F2



F3



F4



F5



F6



F7

Please note:

The fit of the ring is very tight to ensure that the black net stays taut and does not loosen over time. If you have problems attaching the ring, we recommend a triangle cut out of the top of the transparent chamber that will help you to easier fix the mounting ring over the net and chamber [F8]. We will further develop a net that can be easily fixed with an elastic band. New nets will come in 2015 and will be sent to our customers.



F8

* Mackay A. J., Amador M., Barrera R.. An improved autocidal gravid ovitrap for the control and surveillance of *Aedes aegypti*, Parasites & Vectors 2013, 6:225

5. Turn the chamber around and place your pesticide of choice inside the chamber.

There are two options to choose regarding the pesticide:

Option 1: Residual surface insecticides

A killing agent (e.g., residual surface spray insecticide) can be applied to the inner wall of the translucent chamber [F9] to kill mosquitoes through contact (for example Mortein Outdoor Barrier Surface Spray, imiprothrin 0.3 g/kg and 0.6 g/kg deltamethrin Reckitt Bensckiser Pty. Ltd.)

1. Insert the funnel in the chamber [F10].
2. Rotate the funnel clockwise to secure it [F11].
3. Mount the trap by placing the funnel and transparent chamber on the black, water filled trap bucket [F12].



F10



F11



F9



F12

Option 2: blue treated LLINs (long-lasting insecticide-treated net), treated with Alphacypermethrin, that are delivered with the BG-GAT

1. Place the round blue LLIN (diameter about 28.5 cm) [F13] loose into the chamber. The net does not have to be taut. Mosquitoes will get stuck in the mesh and cannot find their way out [F14].



F13



F14

5. As an option, you can additionally wrap the rectangular LLIN (dimensions about 40 x 10 cm) around the the lower half of the black funnel [F15].
6. Insert the funnel in the chamber [F16].
7. Rotate clockwise to secure the net and the funnel [F17].
8. Assemble the trap by placing the mounted parts on the black, water filled trap bucket [F18].



F15



F16



F17



F18

Removal of the mosquitoes

Remove the funnel, and shake the LLIN inside the chamber to dislodge mosquitoes. Mosquitoes can then be removed with forceps or poured into a white tray for sorting.

Maintenance

Change the water (hay infusion or water with other attractants) once a month. Remove any debris that falls into the trap or detains the mosquitoes from entering the trap.

Contact

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Further information about the BG-GAT:
http://www.biogents.com/cms/website.php?id=/en/traps/biogents-trap-systems/bg_gat.htm