

Biogents
Mosquito Control

Mosquito Trap

BG - Suna 

Instruction Manual

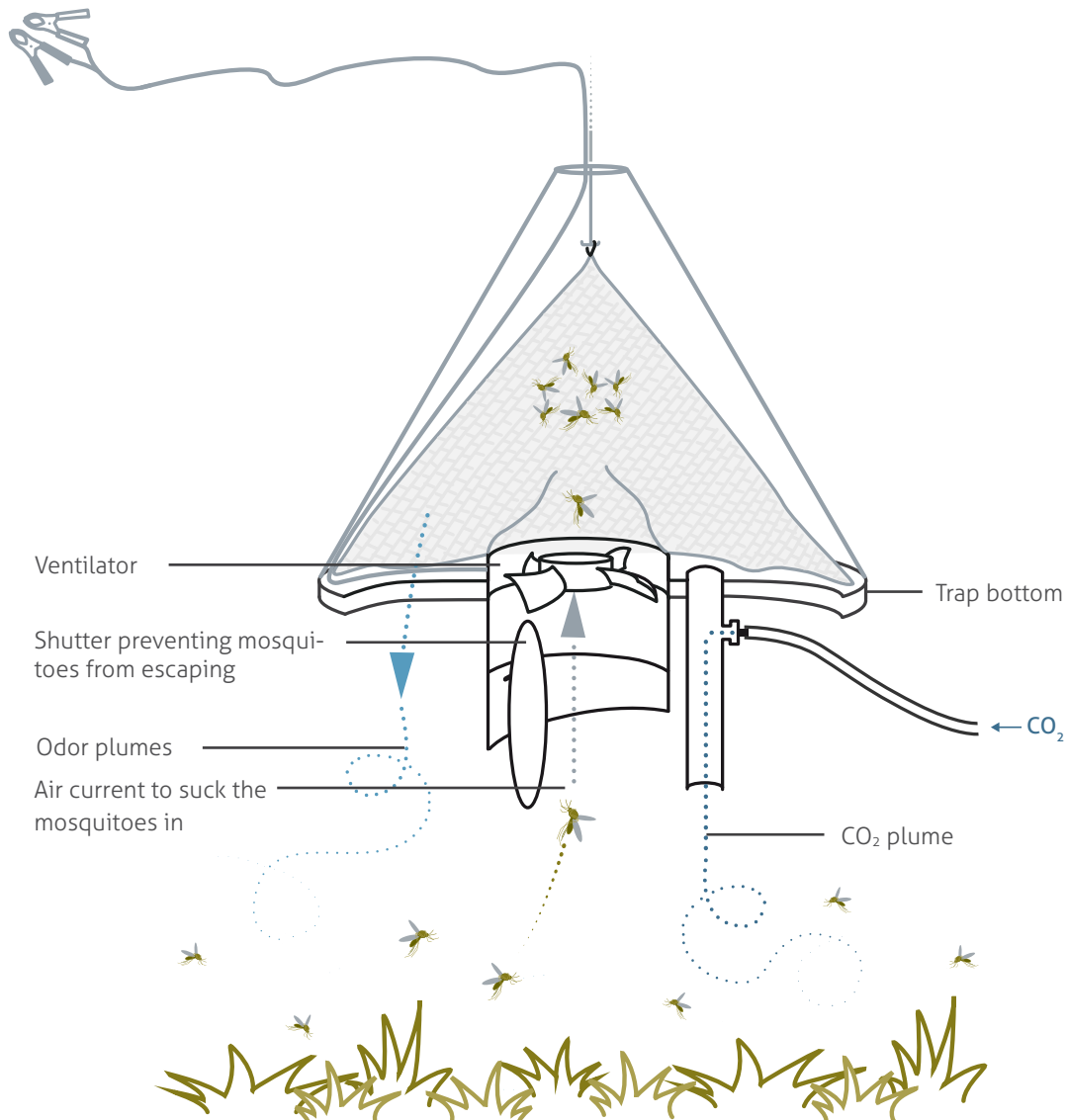
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How does the trap work

The patented Biogents Suna trap is specifically developed for use against malaria mosquitoes.



The combination of

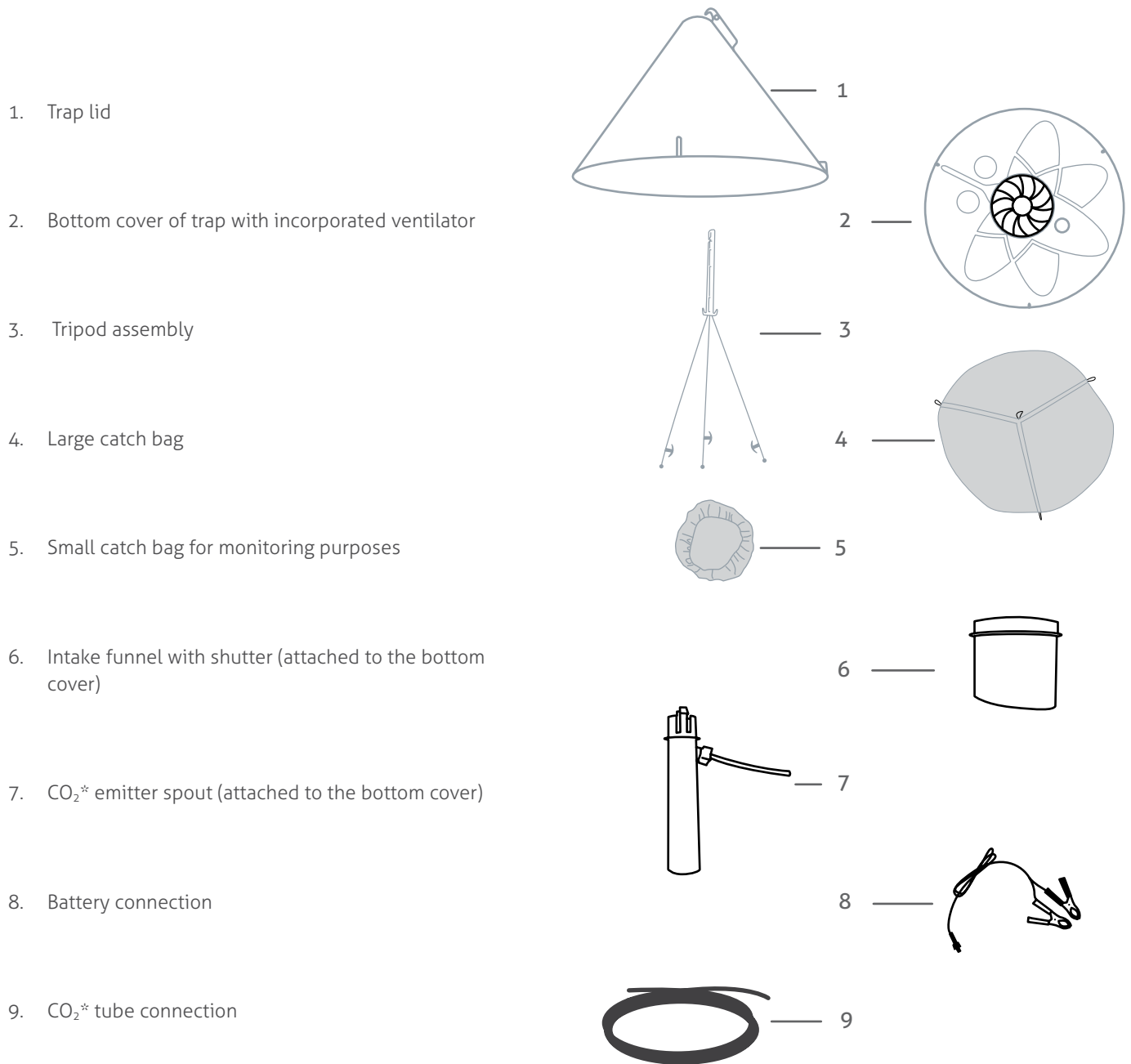
- artificially generated air plumes that mimic human skin,
- skin odors,
- visual cues
- and carbon dioxide (CO₂)

attracts the mosquitoes and traps them in a catch bag.

Advantages:

- Easy to handle and operate
- Environmentally friendly: does not use insecticides or pesticides

Product components

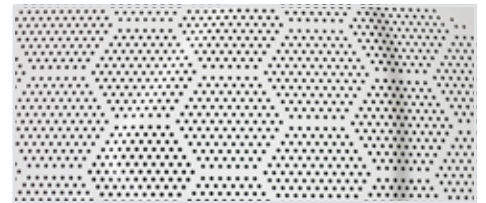


*The CO₂ source is not included in the contents and must be sourced separately

Selected features in detail



- A** — The surface of the bottom cover is riddled with small holes that direct the air plumes out of the trap.



- B** — The shutter mechanism prevents the caught mosquitoes from escaping in case power supply fails for any reason.



Shutter gate closed Shutter gate open

- C** — The power supply cable can be directed through the lid.

- D** — Move the lid up and fix it with the hook on a hanger to work undisturbed on the net.

- E** — An improved cable connection ensures watertightness.



Assembling the trap

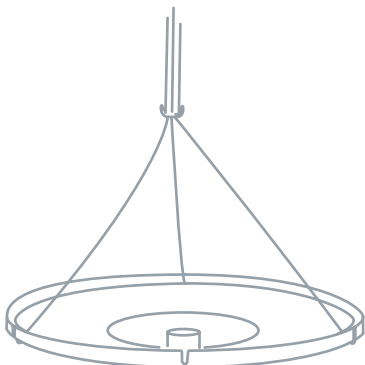
1. Fix the hanging tripod assembly with the three rounded ends onto the bottom cover with the incorporated ventilator by inserting them into the side openings (F1).

Attach the large catch bag to ventilator. Fix the catch bag onto the hanging tripod assembly by placing the top loop onto the top hook (F2) and the three side loops on the bottom hooks (F2).

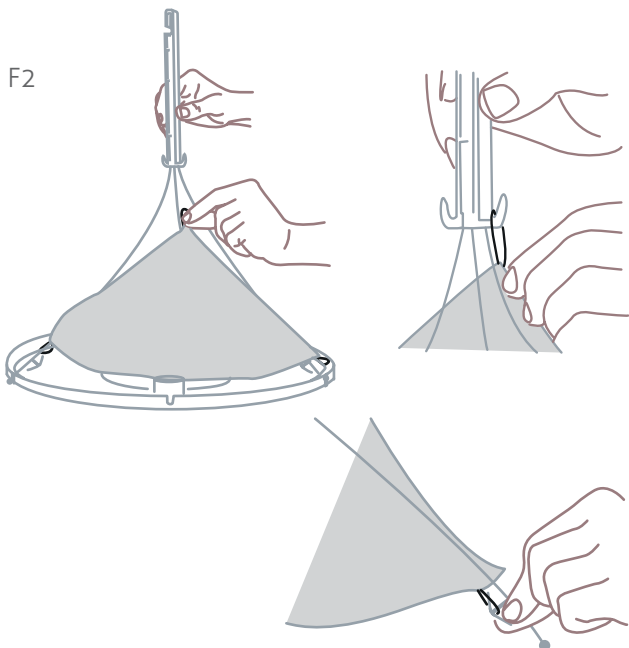
Alternatively you can use a small catch bag: Attach the small catch bag to the intake funnel before the ventilator (F3). Mosquitoes are now caught before they are sucked in by the ventilator. This enables easier identification of the mosquitoes for monitoring purposes. Then attach the intake funnel with the small catch bag onto the ventilator in the bottom cover of the trap (F7).

2. Place the lid over the hanging assembly (F4).
3. Hang the trap on a rope (F5).

F1



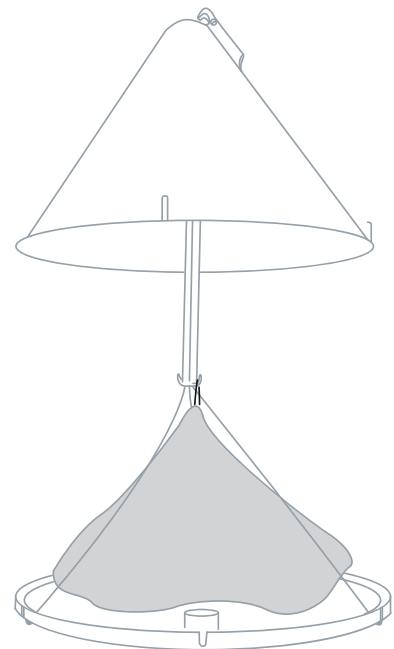
F2



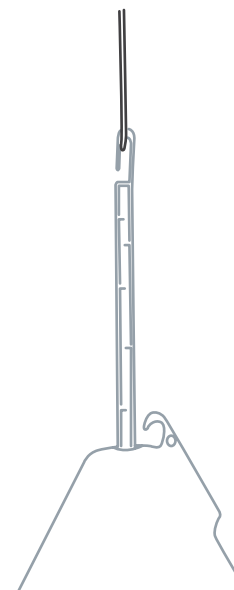
F3



F4



F5

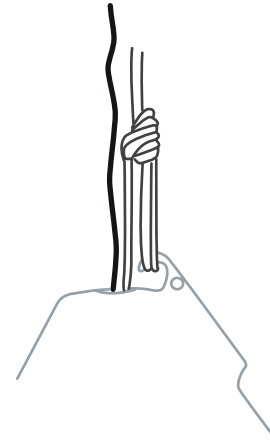


5. Guide the power cable either through the lid and the upper part of the hanging assembly (F6) or laterally through the bottom cover.
6. Attach the intake funnel and the CO₂ emitter nozzle onto the bottom cover of the trap (F7). If you use the small catch bag, attach the intake funnel together with the small catch bag onto the bottom cover.
7. For easier handling when working on the trap, make a loop in the rope above the trap to hang the lid onto (F8).
8. Connect the power plug and replace the lid onto the trap (F9).
9. Connect the CO₂ source with the carbon dioxide emitter nozzle (F10).

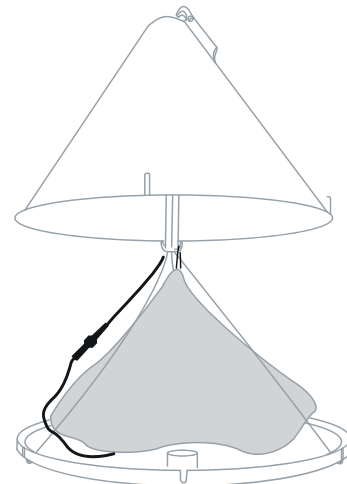
F6



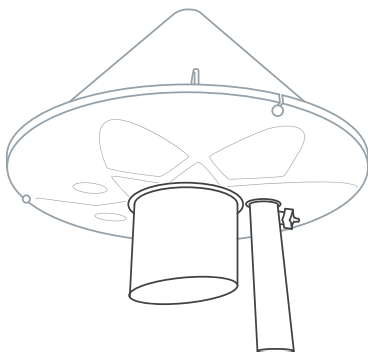
F8



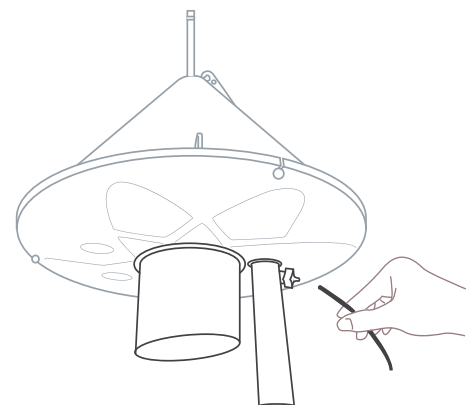
F9



F7



F10



Administering the carbon dioxide

Various sources of carbon dioxide (CO₂) can be used. The CO₂ nozzle can be attached to a gas cylinder, to fermenting yeast, any well insulated dry ice container or another CO₂ source that fits your preference and that is placed away from the trap.

Fermentation of yeast:

Yeast-produced carbon dioxide can be produced by mixing 17.5 g of dry yeast, 250 g sugar and 2½ L of tap water or 35 g of dry yeast, 500 g sugar and 2½ L of tap water in a 5 L bottle. Capturing the foam to prevent the foam from entering the traps can be accomplished by a set up with two bottles. See detailed information for this protocol in a publication at <http://www.ncbi.nlm.nih.gov/pubmed/20973963>.

CO₂ gas cylinders:

In order to supply the trap with the CO₂ attractant, a commercially available CO₂ gas cylinder with six, ten or more kilograms can be used. These can be acquired or rented at drink retailers or bottle depots for a deposit. A door-to-door delivery service may also be possible. We recommend a 10 kg gas cylinder which is also used in restaurants for draft beer and soda.

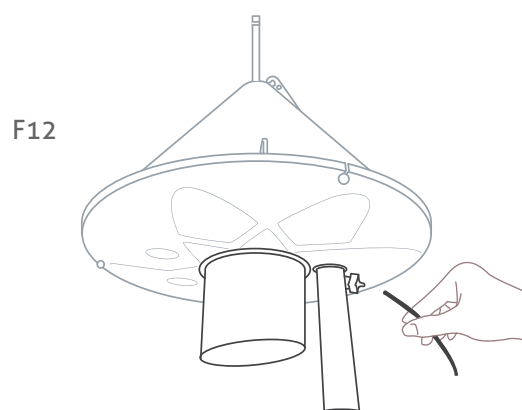
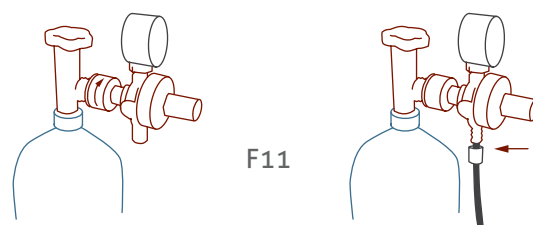
ATTENTION: A current list of distributors with competitive renting conditions can be found at www.biogents.com

Optional: attaching the pressure reducing regulator onto the CO₂ gas cylinder:

If a CO₂ gas cylinder is used, it can be equipped with a specialized pressure reducing regulator that is preadjusted to a constant output pressure of 0.7 bar. Screw the pressure reducing regulator onto the CO₂ gas cylinder by rotating the

screw on the end of the regulator onto the opening on the CO₂ cylinder and make sure it is tight by using a wrench or pliers.(F11).

Attach one end of the CO₂ tube to the regulator and the other end into the designated opening on the CO₂ emitter nozzle on the Suna trap (F12).



Power supply and electricity

The ventilator requires a power source of 9 to 12 V DC (max. 280 mA). By default a battery cable is enclosed (F13). An optional power supply unit (EU version 220V input, 12V output) with fitting plug connection is available (F14). There are also extension cords and extra plug connections available. Please refer to our product catalog.



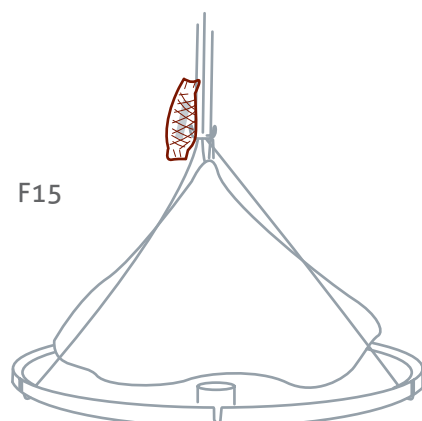
When using batteries, we usually recommend 12 V motorcycle or car batteries. These are easily rechargeable and readily available in most places. As a rule of thumb, you will need a battery capacity of 10 to 11 Ah for each trap with a 24 hr trapping period (for a 48 hr period you will need a capacity of 20 to 22 Ah and so on). This includes a security factor which should give you a peace of mind in most real-life situations.

Lures and attractants

In principal, all kinds of lures can be used with the trap. Simply place the lure inside the trap, e.g. on the top of the net. We offer our patented BG-Lure, which mimics the scent of human skin and releases a mixture of several compounds for up to five months. We also offer the Biogents Sweetscent attractant which is similar to the BG-Lure, but only lasts two months and is ideal for indoor use. Both products use substances which are classified as non-toxic and attract blood-seeking insects that prefer to feed on humans.

Inserting the Sweetscent & BG-Lure:

1. Open the package that contains the lure.
2. Remove the lure from the package.
3. Place the lure inside the trap (F15).





Maintenance and care

General: The ventilator will destroy parts of the mosquitoes. Some will die, some will stay alive. When working with the Suna trap and also when monitoring the catch results, household gloves should be worn and the catch bag should be properly removed. This is to ensure the captured mosquitoes that are still alive cannot escape.

Use a damp cloth to clean the plastic parts of the trap. Do not use any cleaning agents, solvents or insecticides because the residues from these products can have a repelling effect for the mosquitoes and consequently reduce the catch rate of the trap. Do not use any pointy or rough objects to clean the trap.

From time to time, check and make sure that:

- the electrical power supply is on,
- the ventilator of the trap is running smoothly,
- the catch bag is not dirty or clogged with dirt and
- there is enough carbon dioxide.

Emptying, cleaning and exchanging the catch bags and funnel nets:

Important background information: It is important to clean or replace the catch bag because overtime, they can become clogged with dirt, pollen or dust. This restricts the airflow and drastically reduces the catch rate of the trap. The catch bag should be emptied and cleaned or replaced as soon as one of the following situation occurs:

- the catch bag is half full
- the lure dispenser needs to be exchanged (BG-Lure after five months, Biogents Sweetscent after six to eight weeks)
- the air flow through the catch bag is obstructed by dust, pollen or dirt

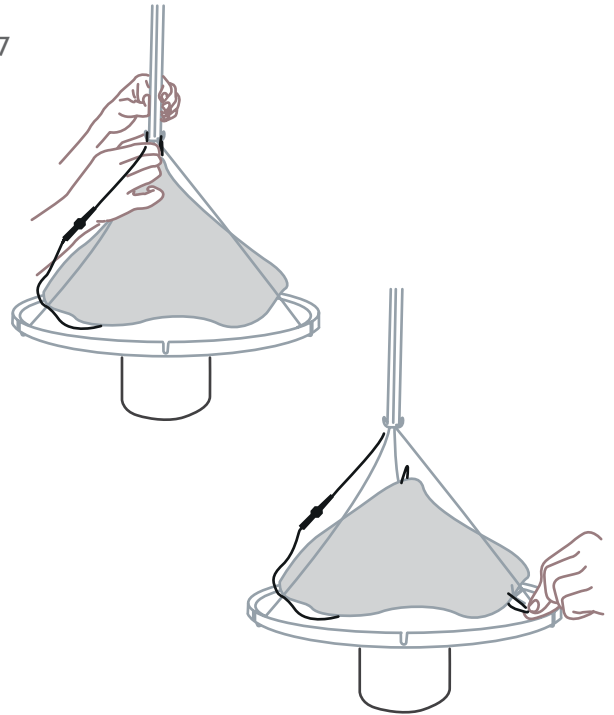
ATTENTION: Regularly check the condition of the catch bag. If it has been damaged or torn, it needs to be replaced.

When changing the catch bag, household gloves should be worn.

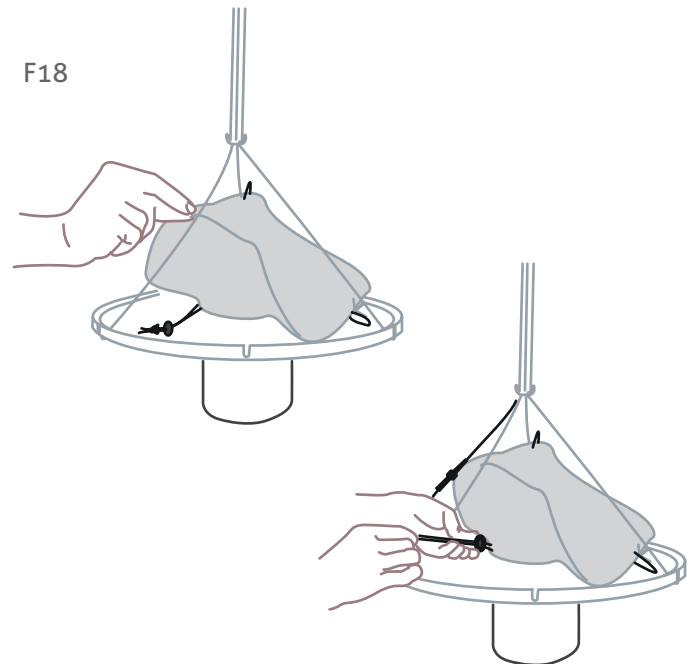
Changing the catch bag:

1. While the ventilator is still running lift the lid and hang it on a hanger (F16).
2. Release the loops on the large catch bag from the hooks on the tripod assembly (F17).
3. Lift the large catch bag to reach the cord around the ventilator (F18).

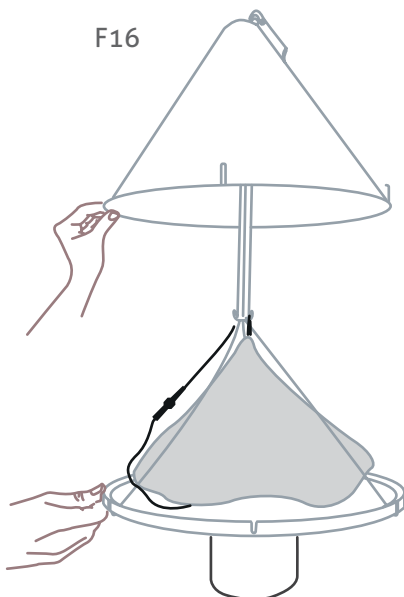
F17



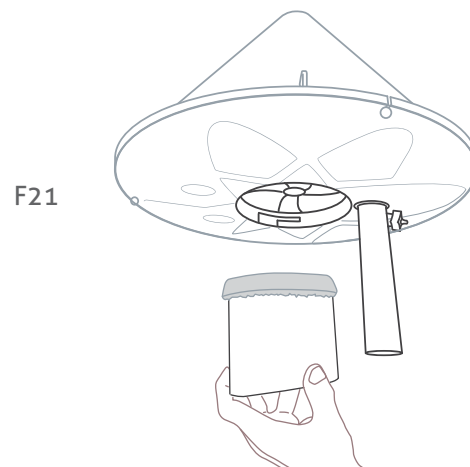
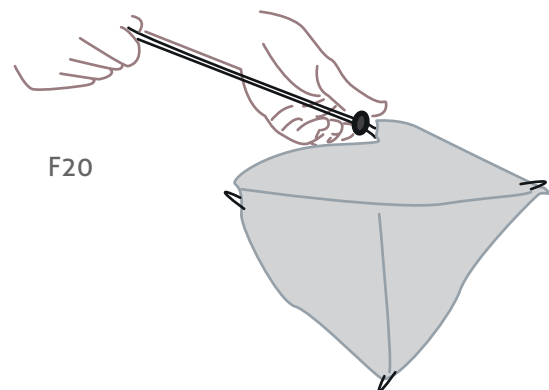
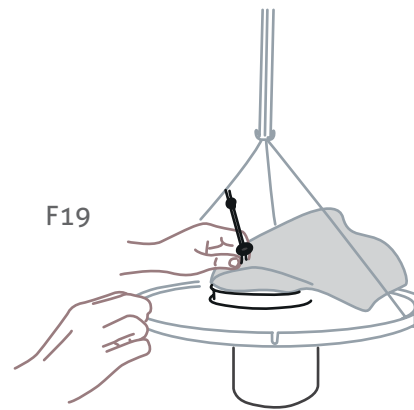
F18



F16



4. Remove the large catch bag from the ventilator. Make sure to keep the catch bag within the suction current of the ventilator (F19).
5. Pull the cord on the large catch bag shut to close the catch bag (F20).
6. Place the closed catch bag in the sun or in a freezer for at least 2 hours to kill the mosquitoes.
7. Replace the new catch bag by following step 1 and 2 from the section titled 'Assembling the trap'.
8. In case you use the small catch bag for monitoring puposes switch off the power. The shutter in the intake funnel will automatically close. Then remove the intake funnel together with the small catch bag from the ventilator (F21) and place both in the sun or in a freezer for at least two hours to kill the mosquitoes.



Cleaning the catch bag:

If the catch bag is not damaged then it can be cleaned and used again. Soak the material in clean water (not over 30°C) for 15 minutes and then thoroughly rinse it in running water (not over 30°C). Do not use any soaps or cleaning agents! Do not dry the material in a dryer and do not place them on any heaters.

Positioning of the trap

The correct placement of the trap is an important factor that heavily influences its effectiveness.

Outdoor use:

Position the trap in a location that is sheltered from wind, heavy rainfall*, and direct sunlight.

*Rainfall will not damage the trap

NOTE: The trap should not be placed too close to walls (min. distance of approximately 1 meter)

Optimal Positioning:

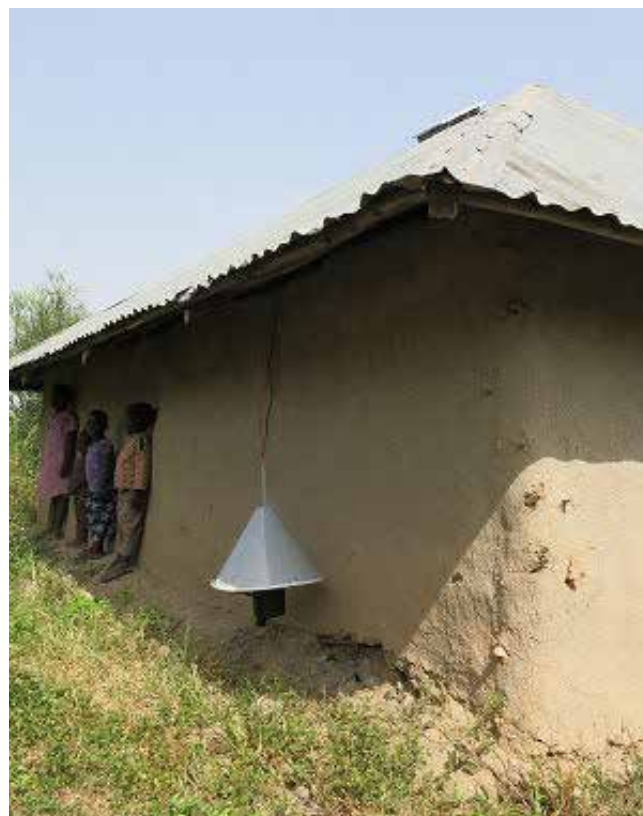
- Ideal locations to position the trap are close to resting areas of mosquitoes such as bushes, shrubs, hedges or any other foliage. However, placing the trap in very tall grass or under bushes will impair its effectiveness.

- The trap should also be positioned close to mosquito breeding sites such as various kinds of temporary stagnant water ranging from small lakes to collections of rain water in rain barrels or old tires. Many mosquitoes do not need a large amount of water for breeding; even a can filled with rain water can be an ideal breeding place.
- When CO₂ is not available as an attractant it might be a good idea to hang the trap close to a house where CO₂ from the residents is directed outside.

Reference

The Suna trap was developed for a campaign for eco-friendly control of malaria on Rusinga Island in Kenya. A pilot project in eighteen houses showed that the traps are indeed effective, and that the local population is happy to use them (F22).

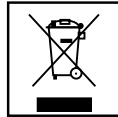
For more information about this project please see the press release at <http://www.wageningenur.nl/en/show/Wageningen-University-starts-campaign-for-ecofriendly-control-of-malaria-on-Rusinga-Island-in-Kenya.htm>



F22: Rusinga Island, Kenya

Technical data

Weight: 1.05kg
Dimension: 52 x 39 cm
3,6 W, 12 VDC



ROHS[✓] CE

EC Declaration of Conformity

Product: Biogents Suna CO2
Product type: Mosquito trap

The undersigned hereby declares, on behalf of Biogents AG company of Regensburg, Germany, that the above referenced product, to which this declaration relates, is in conformity with the provisions of:

- DIRECTIVE 2003/108/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 December 2003 amending Directive 2002/96/EC on waste electrical and electronic equipment (WEEE)
- DIRECTIVE 2004/108/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC
- DIRECTIVE 2005/88/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 14 December 2005 amending Directive 2000/14/EC on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors
- DIRECTIVE 2006/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast)
- DIRECTIVE 2006/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits
- DIRECTIVE 2008/35/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 March 2008 amending Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment as regards the implementing powers conferred on the Commission
- DIRECTIVE 2009/125/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products

The Technical Construction File required by this Directive is maintained at the corporate headquarters of Biogents AG, Weißenburgstr. 22, 93055 Regensburg, Germany.

Regensburg, July 31, 2013

Handwritten signature of Andreas Rose in black ink.

Andreas Rose
(Director)

Handwritten signature of Martin Geier in black ink.

Martin Geier
(Director)

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